# Index to Mechanical Engineering

## Volume 74, January—December, 1952

(A) denotes Abstract; (AC) Author's Closure; (BR) Book Reviews; (C) Correspondence; (D) Discussion; (Ed) Editorial

# A


ABOU-SABE, A. H.
Heat transfer and pressure drop for turbulent flow of air-water mixtures in a horizontal pipe (A) 237

ABRAMSON, A. E.
Investigation of annular liquid flow with concurrent air flow in horizontal tubes (A) 508

ACKERMANN, W. O.
Symmetric turbulent mixing of two parallel streams (A) 922

ACKLEY, R. A.
Process characteristics which affect automatic control (A) 591

ACOUSTICS
Symposium on aircraft noise (A) 950
Underwater sound signals (A) 502

ADAMS, PAUL
Obituary 702

ADDAMS, HOMER
Receives F. Paul Anderson Medal 263

ADHESIVES
Bonding agent for joining metals to each other (A) 1017
Electric gluing unit (A) 321
Plywood is engineered wood 787
Properties of some heat-resistant adhesives 369

AERODYNAMICS
Optimum single propellers in radially varying incompressible inflow (A) 508

AINSWORTH, CYRIL
Industry's last chance to prevent Government control in the field of industrial safety 202

AIR CONDITIONING
Unique cooling and air-conditioning system allows workmen to operate amid high temperatures (A) 404

AIR POLLUTION
Air pollution and the mechanical engineer (A) 160
ASME Committee on Air-Pollution Controls 767
Contaminants in the air (A) 230
National Air Pollution Symposium, 1952 347

AIR TRANSPORT. *See also* TRANSPORTATION
Air freight handling at Kelly Air Force Base 119
Jet airliner service (A) 231
Turbojet-aircraft—the Jetliner (D) 241
Turbojet transports—the "Comet" (D) 243

AIRPLANE ENGINES. *See also* JET PROPULSION
Aircraft gas-turbine research (A) 21
Diesel aircraft engine (A) 30
Jet compressor blades (A) 319
9750-lb-thrust jet engine (A) 750
Some performance characteristics of ball and roller bearings for aviation gas turbines (A) 37
Summary of investigation of two-stroke-cycle gas-generator aircraft engine (A) 239

AIRPLANE INSTRUMENTS
Autopilot (A) 751
Pictorial computer (A) 584

AIRPLANE LANDING GEARS
Friction surfaces for spin-up simulation in landing-gear drop tests (A) 405

AIRPLANE MANUFACTURE
Jet and turboprop airliner production (A) 750
Pressures required for thin press forgings (A) 405

AIRPLANES. *See also* HELICOPTERS, SEAPLANES
Aeronautical research (A) 398
Aircraft nuclear propulsion (A) 20
Airship model testing (A) 495
Convertible jet aircraft (A) 496
Crash injury research (A) 876
Delta wing twin-jet fighter (A) 751
Intercontinental jetliner (A) 912


| ISSUE | PAGE NUMBERS |
|---|---|
| January | 1– 102 |
| February | 103– 184 |
| March | 185– 272 |
| April | 273– 354 |
| May | 355– 442 |
| June | 443– 538 |
| July | 539– 622 |
| August | 623– 704 |
| September | 705– 776 |
| October | 777– 862 |
| November | 863– 958 |
| December | 959–1054 |


AIRPLANES (*continued*)
New method of performance analysis of air-cycle cooling of a high-speed airplane (A) 406
Stainless-steel nacelle (A) 318

AITELLI, ERNEST GREGORY
Obituary 774

ALDRICH, JOHN GLADDING
Obituary 352

ALFORD, J. S.
Fast thermocouples as control-system elements sensing exhaust-gas temperature in aircraft gas turbines (A) 591

ALISON, JOHN R.
The Transit Van System of transportation 377, 839

ALLEN, W. F., JR.
Thermal performance of turbines (D) 671

ALLOYS. *See also* STEEL ALLOYS, TITANIUM
Alloy Casting Institute reports technical progress 952
Steam-turbine alloy (A) 918
Titanium status (A) 1014

ALTORFER, H. A.
Remote-control electric-valve operation for crude and products lines (A) 1030

ALUMINUM
Aluminum industry (A) 223

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE
Annual meeting, St. Louis, 1952 1038

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS
Joint fuels conference with ASME 847, 1042

AMERICAN POWER CONFERENCE
Three-day program, Chicago, 1952 259

AMERICAN ROCKET SOCIETY
Annual dinner, 1951 63

AMERICAN SOCIETY FOR ENGINEERING EDUCATION
Annual meeting 696

AMERICAN SOCIETY FOR TESTING MATERIALS
50-year index to ASTM technical papers and reports 1047
50th Anniversary meeting 693

AMERICAN SOCIETY OF CIVIL ENGINEERS
Centenial of Engineering will mark founding of ASCE 171
One hundred years (Ed) 188

AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS
Annual meeting, 1953 855

AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASME development fund (Ed) 106
Applied Mechanics Division conferences 340, 342, 427, 429, 525, 681, 693
Awards. *See* Honors and Awards
Boiler Code. *See* Boiler Code of ASME
Budget for 1952–1953 770
Codes. *See under subject of code*
Committees
ASME Committee on Air-Pollution Controls active 767
Boiler Code Committee holds first meeting in Canada 527
Boiler Code Committee honored by ASA 941
Boiler Code Committee plans meeting with EIC 260
Boiler Code Committee set up and Code of 1914 adopted (part II of series on Boiler Code history) 640
Dynamic Systems Committee established 420
Junior Committee seeks active junior members 1048
National Nominating Committee, 1952 94
Nominating Committee organizes for 1953 691
Regional Administrative Committees hold meetings 694
Safety Committee attains division status 172
Special Committee on Society Policy releases progress report 86
Council
Actions 697
Executive Committee actions 262, 345, 434, 532, 615, 953, 1048
Report for 1951 42
Development Fund (Ed) 445
Finances for 1950–1951 47
Fuels Division; joint fuels conference with AIME 847, 1042
HR Division
Conference on high pressure 947
Division conference forms part of Seventh National Instruments Conference and Exhibit 682
Junior Forum 95, 179, 267, 348, 437, 533, 617, 699, 771, 857, 951, 1048
Long Island Division holds first dinner meeting 174
Meetings. *See also various divisions and committees*
Annual Meeting, 1951 49
Annual Meeting, 1952 841, 935
Calendar of meetings 95, 174, 262, 347, 419, 529, 611, 687, 769, 853, 949, 1045
Fall Meeting, Chicago, 1952 602, 676, 937
Lubrication Activity Group Meeting, 1952 419
Oil and Gas Power Conference 340, 525, 687
Petroleum Mechanical Engineering Conference, 1952 613, 768
Region VIII, annual meeting, Denver 340, 604
Regional Administrative Committee Meetings, 1952 175
RAC Meetings; schedule for 1953 947
Semi-Annual Meeting, Cincinnati, 1952 339, 416, 524, 684
Spring Meeting, 1952, Seattle 251, 422
Members
Fellows elected 97, 611, 848, 1045
Honorary memberships awarded 69
Membership
Candidates 100, 182, 270, 352, 440, 536, 620, 702, 774, 860, 956, 1052
Membership figures as of Sept. 30, 1952 936
News 86, 171, 251, 339, 416, 524, 602, 676, 765, 841, 935, 1038
Obituaries 100, 182, 272, 352, 440, 536, 622, 702, 774, 860, 956, 1052
Officers elected by letter ballot 936
Oil and Gas Power Division conference 340, 428, 687
Petroleum Division; annual conference, 1952 613, 768, 945
Publications
*Applied Mechanics Reviews* wins award 93
Coupon books for ordering ASME papers 78
Mechanical Catalog and Directory, 1953 852
1952 Society records sent upon request 178
Oil and Gas-Engine Power Costs, 1950 433
Recommended practices for the cleaning of turbine lubricating systems 433

AMERICAN SOCIETY MECHANICAL ENGINEERS (*continued*)
Specialization (Ed) 707
Tribute to applied mechanics (Ed) 625
Sections
Boston Section holds triple-interest meeting 174
Columbia Basin Section installed 262
Mexico Group granted Section status 175
Standards Workshop 176, 349, 436, 615, 698, 856 1049
Student Branches
Regional student-branch conferences, 1951–1952 850
Regional student conference prize winners 851
Regional student conferences for 1952 261
Technical digest of ASME papers 31, 152, 233, 330, 405, 503, 589, 665, 754, 829, 919 1023
Textile Engineering Division spring conference 420
Woman's Auxiliary
Announces The Sylvia W. Farny Scholarship 855
Annual meeting, 1951 92
Wood Industries Division embarks on standardization program 175

AMERICAN WELDING SOCIETY
Annual meeting, 1952 855

ANALOGY. *See* COMPUTERS

ANALYSIS. *See* MECHANICS, SPECTROGRAPHIC ANALYSIS

ANALYZERS. *See* COMPUTERS

ANDERSON, H. H.
Conservation of manpower and materials 389

ANDERSON, W. J.
Operating characteristics of cylindrical roller bearings at high speeds (A) 37

ANGUS, WILLIAM JOHN
Obituary 182

ANTIFRICTION BEARINGS
Life of high-speed ball bearings (A) 37
Operating characteristics of cylindrical roller bearings at high speeds (A) 37
Some performance characteristics of ball and roller bearings for aviation gas turbines (A) 37

APPLIED MECHANICS
Eighth International Congress on Theoretical and Applied Mechanics, Istanbul, 1952 171, 946
Tribute to applied mechanics (Ed) 625

ARCHITECTURE
Wren: His work and times (BR) 413

ARGUE, F. W.
Broom closets or the effect of maintenance upon design of steam power plants (A) 410

ARONSON, D.
Review of optimum design of gas-turbine regenerators (A) 235

ATHERTON, GEORGE H.
Waste-wood-fired gas-turbine power unit (A) 409

ATKIN, E. H.
Turbojet aircraft, with special reference to the Jetliner (AC) 242

ATOMIC ENERGY. *See also* RADIOACTIVITY
Aircraft nuclear propulsion (A) 20
Atomic energy report (A) 323
Atomic engine (A) 749
Brookhaven research reactor (A) 324
European nuclear laboratory to be constructed (A) 979
Experiment in generating power successful (A) 127
High-energy accelerators (A) 909
Industry and the atom 123
Nuclear laboratory (A) 1022
Oak Ridge offers course in reactor technology 178
Oak Ridge pile (A) 228
U. S. Atomic Energy Commission; twelfth semiannual report (A) 908

AULT, E. STANLEY
Biography 611
Elected Fellow of ASME 611

AUTOMATIC CONTROL. *See also* SERVOMECHANISMS
Analysis of developments in automation (A) 666, 810
Application of temperature control to turbojet engines (A) 923
Automatic-control terminology 486, 591
Boiler controls for multiple fuel firing in modern steam-generator installations (A) 923
Frequency-response analysis for industrial automatic control systems (A) 159
Modern high-pressure high-temperature boilers. 2-Present trends and considerations in steam-temperature controls—reheat boilers 878
Optimalizing control systems (A) 145
Process characteristics which affect automatic control (A) 591
Process instrumentation (A) 579
Robot machinist (A) 29
Sensitive pressure controller for high-pressure service (A) 836

AVERILL, EARL A.
Obituary 704

AVERY, WILLIAM H.
Receives C. N. Hickman award 63

AVIATION
University of California's new aeronautics facilities (A) 406

## B

BACKER, G. H.
Heat transfer from spheres to a rarefied gas in supersonic flow (A) 160

BAILEY, A. D.
Receives honorary doctor of engineering degree 421

BAILEY, E. G.
Biography 74
Building a company with engineering graduates 447
Honorary Member of the ASCE 849
Receives John Fritz Medal 74

BAILEY, N. P.
Flow and combustion stability (A) 39

BAKER, DONALD R.
Cooling-tower characteristics as determined by the unit-volume coefficient (A) 756

BALDWIN, GEORGE B.
A $65 question: What's it like in "Heaven"? (BR) 118

BALL BEARINGS. *See* ANTIFRICTION BEARINGS

BALLMAN, H. C.
Proper design, installation, and application of coal-burning equipment for boilers (25–500 hp) to prevent smoke and air pollution (A) 755

BARNARD, CLAYTON H.
Biography 72
Receives Melville Prize for original work 72

BARNARD, D. P., 4TH
Elected SAE president for 1952 260

BARROWS, DONALD STUART
Obituary 182

BARTHOLOMAEI, HERMAN ALAMO
Obituary 956

BATES, ALBERT HARIAN
Obituary 774

BATES, H. J.
Shotpeening of gears (D) 79

BATT, WILLIAM L.
Biography 75
Receives Howard Coonley Medal 949
Receives Hoover Medal 75
Rediscovering America 131

BEAMS
Bending of a circular beam resting on an elastic foundation (A) 33
Deflection and stresses in beams subjected to bending and creep (A) 670
Forced lateral vibration of beam carrying a concentrated mass (A) 594
Free vibrations of constrained beams (A) 594
Influence of aging on the Bauschinger effect in inelastically strained beams (A) 589
Large plastic deformations of beams under transverse impact (A) 594
Nonlinear problem in the bending vibration of a rotating beam (A) 834
Plastic-rigid analysis of long beams under transverse impact loading (A) 834
Torsion of curved beams of rectangular cross section (A) 35

BEARINGS. *See also* ANTIFRICTION BEARINGS
Bearings, lubricants, and lubrication; a digest of 1951 literature 885
Bibliography 889
Calculated performance of dynamically loaded sleeve bearings—III (A) 157
Critical whirling speeds of shaft-disk systems (A) 921
Economic study of roller bearings on freight cars (A) 159
Effects of solid inclusions in sleeve-bearing oil supply (A) 592, 963
Electrical method for determining journal-bearing characteristics (A) 157
Oil flow in plain journal bearings (A) 40
Oil flow, key factor in sleeve bearing performance (A) 41
On the solution of the Reynolds equation for slider-bearing lubrication (A) 41
II. The viscosity a function of the pressure (A) 504
III. Effect of transverse curvature (A) 921

BEATTY, H. RUSSELL
Named acting dean, school of engineering, Pratt Institute 1044

BECKER, HOWARD
Obituary 622

BEEDE, W. L.
Some investigations with wet compression (A) 506

BEENSEN, CHARLES
Obituary 182

BEILER, ALBERT H.
Training power-plant employees on the American Gas and Electric System (A) 665

BEITLER, SAMUEL R.
Progress report on the study of supercompressibility factors for natural gases (A) 158

BENDIXEN, IVAR
Vibrations in knee-type horizontal milling machines (A) 919

BENEDICT, R. P.
Instrumentation for axial-flow-compressor research (A) 591

BENTLY, JULIUS GORDON
Obituary 860

BENTSON, HAROLD J.
Steel-works power plants (A) 924

BERG, CLYDE
Engineering features of the Union Oil shale retort (A) 1023

BERGELIN, O. B.
Heat transfer and fluid friction during flow across banks of tubes—IV, a study of the transition zone between viscous and turbulent flow (A) 237

BERGMAN, E. O.
New-type code chart for the design of vessels under external pressure (A) 238

BERKEY, DONALD C.
Design features of a 5000-hp gas turbine (A) 235

BERYLLIUM
Less familiar metals of commercial importance 3

BEST, JESSE L.
Obituary 704

BETATRONS. *See* NONDESTRUCTIVE TESTING

BEUTEL, A. P.
Biography 848
Elected Fellow of ASME 848

BIERMANN, A. E.
Summary of investigation of two-stroke-cycle gas generator aircraft engine (A) 239

BIGGERT, FLORENCE COTTER, JR.
Obituary 440

BILD, C. F.
Simple high-speed air spinner for centrifugal testing of small mechanical devices (A) 921

BILLMYER, CARROLL D.
Promoting ethics in government (C) 80

BINDER, R. C.
Linear-resistance meters for liquid flow (A) 33

BIOMECHANICS
Crash injury research (A) 876

BIRN, SERGE A.
Stretching engineering skill with predetermined time standards (A) 755

BIXBY, A. M.
Developments in rubber draft gears (A) 737

BLACKALL, FREDERICK S., JR.
Biography 689
Nominated for president 688

BLACKBURN, J. F.
Contributions to hydraulic control
1—Steady-state axial forces on control-valve pistons (A) 38
2—Transient-flow forces and valve instability (A) 38

BLACKSHEAR, PERRY L., JR.
Sonic-flow-orifice temperature probe in high-gas-temperature measurement (A) 669

BLADES. *See* COMPRESSORS

BLAIR, R. W.
Aircraft gas-turbine bearing lubrication (D) ... 512

BLAKE, A. HAROLD
Obituary ... 182

BLAKE, ALFRED D.
Biography ... 1045
Elected Fellow of ASME ... 1045

BLANK, H. A.
Behavior of superheater tubing materials in contact with combustion atmospheres at 1350 F (A) ... 32

BLANK, WALTER EDWARD
Obituary ... 860

BLAZER, R. U.
High-temperature stress-rupture testing of tubular specimens (A) ... 32

BLESSING, W. J.
Lubrication problems in design of heavy-duty engines (A) ... 829

BLIZARD, JOHN
Biography ... 611
Elected Fellow of ASME ... 611

BOEHM, J. C.
Conditioning of natural gas ... 563

BOELTER, L. M. K.
Suggested filing system for keeping abreast of technical literature and general information of interest to the engineer ... 647

BOILER CODE OF ASME
ASME Boiler Code (Ed) ... 541
ASME Boiler Code
I. Introduction—The antecedents of the code ... 555
II. ASME sets up Boiler Code Committee and adopts code of 1914 ... 640
III. The administration of the first code—1915–1918 ... 727
IV. ASME expands the boiler code—1919–1924 ... 897
V. Administration of the 1924 edition of Power Boiler Code—1925–1927 ... 996
Interpretations ... 84, 169, 249, 415, 522, 762, 933, 1036
Revisions and addenda ... 84, 170, 250, 415, 522, 763, 934, 1036

BOILER FURNACES
Investigation of the variation in heat absorption in a natural-gas-fired, water-cooled steam-boiler furnace (A) ... 233
Operating experiences with cyclone-fired steam generators ... 359, (D) 930
Station design with cyclone-fired steam generators (A) ... 332

BOILERS
Boiler controls for multiple fuel firing in modern steam-generator installations (A) ... 925
Boiler research (A) ... 820
Controlled-circulation boilers (A) ... 147
Correlation of silica carry-over and solubility studies (A) ... 330
Design and application of waste-heat boilers ... 480
Influence of boiler design and operating conditions on steam contamination (A) ... 331
Modern high-pressure high-temperature boilers
1. General design trends and considerations ... 797
2. Present trends and considerations in steam-temperature controls—reheat boilers ... 878
Navy boiler test facilities (A) ... 495
Operation and performance of modern reheat boilers (A) ... 152
Progress report of reheat boiler operation and design (A) ... 153
Some design factors relating to performance and operation of reheat boilers (A) ... 153

BOILING
Method of correlating heat-transfer data for surface boiling of liquids (A) ... 237

BOLTED JOINTS
Bolt elongations and loads (A) ... 38
Modern steel bolting for piping and pressure vessels (A) ... 1024

BOLTON, J. W.
Comparisons at elevated temperatures of some commercial grades of ferritic cast steels (A) ... 670

BOLTS AND NUTS
American Standard, Round Head Bolts, recently published ... 856
Bolt, Nut and Rivet Standards published by Industrial Fasteners Institute ... 950
Standard on Square and Hexagon Bolts and Nuts being developed ... 1049

BONDING. *See* ADHESIVES

BONNETT, LOUIS BLAKE
Obituary ... 272

BOOK REVIEWS
*Applied Statistics;* a new journal of the Royal Statistical Society ... 760
Combustion, flames, and explosions of gases ... 247
Corrosion guide ... 167
Data book for civil engineers ... 518
Defense without inflation ... 312
Engineers and ivory towers ... 760
Exploration of space ... 1035
Extrusion of plastics, rubber, and metals ... 600
Goals and strategy in collective bargaining ... 118
How to chart time-study data ... 81
Hydraulic transients ... 81
Incentive management ... 167
Josiah Willard Gibbs: The history of a great mind ... 247
Modern American engineers ... 931
Plastics molding ... 518
Readings in personnel administration ... 600
Safety Valve; Poems by Fred H. Colvin ... 414
Science of flames and furnaces ... 673
Systems analysis for effective administration ... 517
Theory of price control ... 651
Treatise on powder metallurgy. Vol. 3, classified and annotated bibliography ... 674
Work measurement: new principles and procedures ... 672
Wren: His work and times ... 413

BOOKS RECEIVED IN LIBRARY ... 82, 167, 248, 337, 414, 519, 601, 674, 761, 840, 933, 1036

BORN, HAROLD J.
Direct-fired heaters in natural gasoline plants, their application, specification, and selection (A) ... 1025

BORON
Less familiar metals of commercial importance ... 3

BOSTON, O. W.
Definitions, functions, types, and designations of cutting fluids (A) ... 507
Relative abrasiveness of the cast surfaces of various gray-iron castings on single-point tools of high-speed steel (A) ... 593

BOWLUS, BENJAMIN H.
Obituary ... 1052

BOYD, JOHN
Some performance characteristics of ball and roller bearings for aviation gas turbines (A) ... 37

BRAKEL, LEWIS H.
Mechanical design in oil-shale retorting plants (A) ... 1025

BRETOI, REMUS N.
Automatic flight control (Correction) ... 840

BRIDGES
Bridges and bridge construction in the United States (A) ... 1011

BRIEFING THE RECORD ... 19, 140, 219, 315, 392, 490, 575, 653, 742, 816, 909, 1011

BRIMLEY, DONALD E.
New method of performance analysis of air-cycle cooling of a high-speed airplane (A) ... 406

BRISTER, P. M.
Influence of boiler design and operating conditions on steam contamination (A) ... 331

BRIZZOLARA, RALPH D.
Biography ... 848
Elected Fellow of ASME ... 848

BROACHES AND BROACHING. *See* MACHINE-SHOP PRACTICE, MACHINE TOOLS

BROPHY, J. F.
Experiences with synthetic lubricants (D) ... 162

BROWAR, S. R.
Correlation of silica carry-over and solubility studies (A) ... 330

BROWN, C.
Adaptation of the spectrophotometric determination of small amounts of soluble silica in water to the determination of undissolved forms of silica (A) ... 332

BROWN, CAREY H.
Manpower utilization and national security; a statement by the Engineering Manpower Commission of Engineers Joint Council ... 892
What are the opportunities in engineering and science? ... 473

BROWN, E. CARY
Price controls in mobilization (BR) ... 651

BROWN, G. A.
Heat transfer and fluid friction during flow across banks of tubes—IV, a study of the transition zone between viscous and turbulent flow (A) ... 237

BROWN, J. CALVIN
Biography ... 848
Elected Fellow of ASME ... 848

BROWN, JAMES MONROE
Obituary ... 352

BROWN, N. C.
From handmade to mass-produced wood furniture (A) ... 926

BRUNOT, A. W.
Clearanceometer for determining blade-tip clearances of axial-flow compressors (A) ... 591

BRUSH, D. O.
Axial tension and bending interaction curves for members loaded inelastically (A) ... 589

BRYAN, WALTER EDWIN
Biography ... 1045
Elected Fellow of ASME ... 1045

BUCHI, ALFRED J.
Receives George R. Henderson Medal ... 949

BUCKLAND, BRUCE O.
Design features of a 5000-hp gas turbine (A) ... 235

BUCKLING
Bending and buckling of an elastically restrained circular plate (A) ... 509

BUILDINGS. *See also* HOUSING

BUNKER, WILLIAM B.
Design proposal for a military helicopter ... 709

BUNTING, SPENCER L.
Operation of spreader stokers (D) ... 1034

BURGESS, C. O.
Properties of cast iron (D) ... 516

BURGESS, VINCENT B.
Operating experiences with 1250 gpm demineralizer water-treatment plant (A) ... 925

BURKE, ROBERT FRANCES
Obituary ... 774

BURNERS
Commercial burner oil specifications ... 475
Oil specifications for commercial burners (D) ... 929
Operating experiences with cyclone-fired steam generators ... 359, (D) 930
Study of burner oscillations of the organ-pipe type (A) ... 593

BURNETT, H. R.
Symmetric turbulent mixing of two parallel streams (A) ... 922

BURNETTE, ALGERNON REX
Obituary ... 704

BURSTING TESTS
Rupture-disk design evaluation and bursting tests (A) ... 1030

BURWELL, J. T.
Calculated performance of dynamically loaded sleeve bearings—III (A) ... 157

BUSCH, FRANK
Obituary ... 182

BUTTERFIELD, MAURICE ALTON
Obituary ... 272

BYE, NORMAN C.
Elements of circular saw design (A) ... 155

BY-PRODUCTS. *See* WOOD WASTE


# C


CAHN, S. L.
Analysis of some hydraulic components used in regulators and servomechanisms (A) ... 159

CALCIUM
Less familiar metals of commercial importance ... 3

CALDWELL, WILLIAM EDWARD
Biography ... 97
Elected Fellow of ASME ... 97

CAMERAS. *See* PHOTOGRAPHY

CAMETTI, B.
Hysteresis of shaft materials in torsion (A) ... 38

CAMP, GERALD MILLER
Obituary ... 352

CAMPBELL, A. S.
Time required for constant-volume combustion (A) ... 156

CAMPBELL, IVAN E.
Air freight handling at Kelly Air Force Base ... 119

CAMPBELL, WILLIAM SPENCER
Obituary ... 860

CAMS
Pressure angles in cam roller followers (A) ... 667

CANADA
Canadian industry (A) ... 654

CANT, DAVID ARTHUR
Obituary ... 536

CARBIDE TOOLS. *See* SAWS, WOODWORKING

CARBIDES. *See* METAL CARBIDES

CARBON
Atomic calendar (A) ... 403

CAREY, JOHN R.
Determination of local forced-convection coefficients for spheres (A) ... 921

CARLSON, ELDEN GUNNARD
Obituary ... 956

CARLSON, J. R.
Thermal performance of modern turbines ... 205, 672

CARLSON, P. G.
Design features of a 250-kw gas-turbine engine used as drive for shipboard emergency generator ... 197, 515

CARNEY, B. R.
Economics of natural gas and liquefied petroleum gases ... 467

CARROLL, A. L.
Field tests of oil and gas residential space heating (A) ... 506

CARROLL, HARRY CLARENCE
Fuel and engineering consulting service for small plants (A) ... 39
Methods of storing coal (D) ... 412
Obituary ... 352

CARROLL, PHIL
Incentive management (BR) ... 167
Incentives for better production effectiveness (A) ... 41, 573
Work measurement (BR) ... 672

CARTER, D. S.
Electrical method for determining journal-bearing characteristics (A) ... 157

CARTER, R. M.
Crude-oil working tanks: design, construction, operation, and maintenance considerations (A) ... 1024

CARTER, W. J.
Torsion of a circular shaft with diametrically opposite flat sides (A) ... 507

CAST IRON. *See also* METAL CUTTING
Ductile cast iron (A) ... 493
Dynamic shear-modulus apparatus and production test results for a cast crankshaft alloy (A) ... 830
Properties of cast iron (D) ... 516
Relative abrasiveness of the cast surfaces of various gray-iron castings on single-point tools of high-speed steel (A) ... 593

CASTINGS. *See* FOUNDRY PRACTICE, IRON CASTINGS, STEEL

CAUGHEY, R. H.
Recent experience in examination of high-temperature catalytic-cracking pressure equipment (A) ... 36

CAVALLI, DANTE
Named Rice Scholar ... 603

CEMENTING. *See* PETROLEUM-WELL EQUIPMENT

CENTENNIAL OF ENGINEERING
Addresses planned to demonstrate the contributions which engineering has made to our national progress (Ed) ... 357
American Power Conference opens six-month celebration ... 425
ASME joins in Centennial celebration ... 937
Celebration attracts thousands to Chicago ... 765
Chicago—1893 and 1952 (Ed) ... 445
Features of the Centennial of Engineering ... 680
100 years of engineering; a report of the Centennial of Engineering ... 867
Plans for foreign participation announced ... 602
Theme for the Centennial (Ed) ... 541
Two days at the Centennial (Ed) ... 779
Yale School of Engineering celebrates Centennial ... 1043

CENTRIFUGAL MACHINES
Simple high-speed air spinner for centrifugal testing of small mechanical devices (A) ... 921

CERAMICS. *See* METAL COATINGS

CHADWICK, W. L.
Etiwanda—A study in over-all steam-station economy ... 543

CHANG, C. C.
Marcus method applied to solution of uniformly loaded and clamped rectangular plate subjected to forces in its plane (A) ... 509

CHAO, B. T.
Significance of the thermal number in metal machining (A) ... 754
Thermophysical aspects of metal cutting (A) ... 31
Tool forces and tool-chip adhesion in the machining of nodular cast iron (A) ... 31

CHARNES, A.
On the solution of the Reynolds equation for slider-bearing lubrication (A)... 41
II. The viscosity a function of the pressure (A) ... 504
III. Effect of transverse curvature (A) ... 921

CHILTON, E. G.
Pulsations in gas-compressor systems (A) ... 33

CHIPMAN, JOHN
Receives Albert Sauveur Achievement Award and Losana Gold Medal (Italy) ... 949

CHIPS AND CHIP FORMATION. *See* METAL CUTTING

CHRISTIANO, J. G.
Airy integral analysis of beam columns with distributed axial loading having a fixed line of action (A) ... 507

CHRISTIE, A. G.
Made honorary member of The Japan Society of Mechanical Engineers ... 98

CHROMIUM
High-purity chromium (A) ... 1015

CHUCKS. *See* MACHINE TOOLS

CITIZENSHIP
Bringing the engineering viewpoint to bear on public affairs; a realistic approach ... 967
The retreat from freedom ... 135
Technology in a troubled world ... 784

CIVILIZATION
Pledge of faith in America's future; science and technology in a time of challenge ... 980

CLADDING. *See* COPPER, STEEL

CLANCY, JAMES RAYMOND
Obituary ... 704

CLARK, JOHN B.
New industrial revolution (C) ... 598

CLARK, R. A.
Stresses and deformations of toroidal shells of elliptical cross section (A) ... 34

CLARKE, ALLEN W.
Operating experience of the Talgo train ... 375

CLEMENS, ABRAHAM BOWMAN
Obituary ... 1054

CLUTCHES
Magnetic-particle clutch (A) ... 38

COAL
Bituminous coal industry (A) ... 225
Chemicals from coal (A) ... 656
Coal pipe line (A) ... 230
Coal structure (A) ... 323
Coal technology research (A) ... 225
Comparative performance of coals of different rank in a film-cooled gas-turbine generator (A) ... 503
Engineering service in the coal industry (A) ... 40
Properties of coal—their influence on performance of coal-burning apparatus (A) ... 755

COAL ASH AND SLAG
Operating experiences with cyclone-fired steam generators ... 359, (D) 930

COAL-BURNING EQUIPMENT
Preventing air pollution from coal fired steam generators (A) ... 756
Proper design, installation, and application of coal-burning equipment for boilers (25–500 hp) to prevent smoke and air pollution (A) ... 755
Properties of coal—their influence on performance of coal-burning apparatus (A) ... 755

COAL GASIFICATION
Direct gasification of coal discussed at two international scientific conferences (A) ... 403
First international underground coal gasification conference held ... 346
Thermodynamics of gasification of coal with oxygen and steam (A) ... 39
Underground gasification (A) ... 144

COAL HANDLING
Coal-barge unloader (A) ... 396

COAL HYDROGENATION
Coal and coal-paste preparation and transfer problems for hydrogenation service (A) ... 927
Corrosion and erosion in the synthetic-fuels demonstration plant (A) ... 928

COAL MINING
German coal planer (A) ... 1021

COAL STORAGE
Methods of storing coal (D) ... 412

CODES. *See subject of code*

COFFIN, L. F.
Elected honorary director of AISE ... 949

COLLECTIVE BARGAINING
A $65 question: What's it like in "Heaven"? (BR) ... 118

COLLINS, W. L.
Physical and mechanical properties of cast iron (AC) ... 516

COLUMBIUM
Less familiar metals of commercial importance ... 3

COLUMNS
Airy integral analysis of beam columns with distributed axial loading having a fixed line of action (A) ... 507

COLVIN, FRED H.
Safety Valve. Poems by Fred H. Colvin (BR) ... 414

COLWELL, L. V.
Comparison of parameters for the machining of gray cast iron (A) ... 31

COMBUSTION
Combustion, flames, and explosions of gases (BR) ... 247

COMBUSTION
Combustion fundamentals of heavy-duty gas engines (A) ... 830
Contribution to the theory of the development and stability of detonation in gases (A) ... 156
Design factors in the development of a small high-heat-release combustor (A) ... 609
Effect of high-frequency sound waves on an air-propane flame (A) ... 236
Energy basis for comparison of performance of combustion chambers (A) ... 609
Engineering service in the coal industry (A) ... 40
Flame propagation in cylindrical tubes ... 483
Flame velocities in carbon monoxide-oxygen mixtures (A) ... 755
Flow and combustion stability (A) ... 39
International Symposium on Combustion, held at M.I.T. ... 682
Investigation of the variation in heat absorption in a natural-gas-fired, water-cooled steam-boiler furnace (A) ... 233
Nondimensional correlation of flame propagation at subatmospheric pressures (A) ... 668
Science of flames and furnaces (BR) ... 673
Study of detonative phenomena in gaseous mixtures by the use of shock-tube techniques (A) ... 505
Time required for constant-volume combustion (A) ... 156

COMPASSES. *See* INSTRUMENTS—GYROSCOPIC

COMPRESSORS
Clearancemeter for determining blade-tip clearances of axial-flow compressors (A) ... 591
Design considerations and development of a broad range, high-efficiency centrifugal compressor for a small gas-turbine compressor (A) ... 503
Full-scale fatigue testing of compressor cylinders (A) ... 1029
Instrumentation for axial-flow-compressor research (A) ... 591
Jet compressor blades (A) ... 319
New method of calculation of reheat factors for turbines and compressors (A) ... 156
On asymmetric flow in an axial-flow compressor stage (A) ... 923
Performance of a cascade designed for prescribed loading (A) ... 757
Pulsations in gas-compressor systems (A) ... 33
Radial-flow compressors and turbines for the simple small gas turbine (A) ... 408
Some investigations with wet compression (A) ... 506
Wet compression in an axial-flow compressor (A) ... 236

COMPUTERS. *See also* AIRPLANE INSTRUMENTS
Association for Computing Machinery holds international meeting ... 606
Automatic computing equipment subject of two-day symposium ... 1039
Bibliography ... 639
Compact electronic computer (A) ... 402
Digital automatic computer to help develop guided missiles (A) ... 914
Electronic computer (A) ... 817

COMPUTERS (*continued*)
Engineering uses of analog computing machines ... 635
Pipe-line network analyzer (A) ... 588

COMSTOCK, G. F.
Rupture and creep characteristics of titanium-stabilized stainless steel at 1100 to 1300 F (A) ... 32

CONKLIN, R. M.
Design of flat-wound tension springs (A) 38

CONROY, M. F.
Plastic-rigid analysis of long beams under transverse impact loading (A) ... 834

CONSERVATION
Conservation of manpower and materials
Pittsburgh Mechanical-Engineering Conference to stress conservation ... 258

CONSULTING SERVICE. *See* ENGINEERING

CONTACTS
Temperature development in a heated contact with application to sliding contacts (A) ... 834

CONTROL. *See* AUTOMATIC CONTROL, GOVERNORS, MACHINE TOOLS, TEMPERATURE CONTROL, VALVES

CONVEYERS. *See* MATERIALS HANDLING, TRANSPORTATION

CONWAY, H. D.
Bending of a uniformly loaded rectangular plate with two adjacent edges clamped and the others either simply supported or free (A) ... 509
Bending of uniformly loaded sectorial plates with clamped edges (A) ... 33
Marcus method applied to solution of uniformly loaded and clamped rectangular plate subjected to forces in its plane (A) ... 509

COOK, N. H.
Mechanics of three-dimensional cutting operations (A) ... 160
Rotary cutting tool (A) ... 160
Shear-angle relationship in metal cutting (A) ... 668

COOLIDGE, W. D.
Receives K. C. Li Medal ... 610

COOLING. *See also* ENGINE COOLING SYSTEMS, HEAT TRANSFER

COOLING SYSTEMS
New method of performance analysis of air-cycle cooling of a high-speed airplane (A) ... 406

COOLING TOWERS
Cooling-tower characteristics as determined by unit-volume coefficient (A) 756

COOMBS, W. F., JR.
Frequency-response analysis for industrial automatic control systems (A) ... 159

COOPER, HOWARD
Obituary ... 958

COOPER, W. E.
Determination of principal plastic strains (A) ... 161

COPPER
Copper-clad steel plate (A) ... 1017

CORDER, S. E.
Waste-wood-fired gas-turbine power unit (A) ... 409

CORES. *See* FOUNDRY PRACTICE

COREY, R. C.
Investigation of the variation in heat absorption in a natural-gas-fired, water-cooled steam-boiler furnace (A) 233
Thermodynamics of gasification of coal with oxygen and steam (A) ... 39

CORROSION
Behavior of superheater tubing materials in contact with combustion atmospheres at 1350 F (A) ... 32
Corrosion guide (BR) ... 167
Corrosion prevention (A) ... 29
Corrosion testing (A) ... 30, 581
National Assn. of Corrosion Engineers holds regional conference ... 951
Stress corrosion (A) ... 492

CORROSION-RESISTANT METALS. *See* METAL CARBIDES

CORTEN, H. T.
Effect of slightly elevated-temperature treatment upon microscopic and submicroscopic residual stresses induced by small inelastic strains in metals (A) 589
Influence of aging on the Bauschinger effect in inelastically strained beams (A) ... 589

COST REDUCTION. *See* ECONOMICS

COULBERT, C. D.
Mach-Zehnder interferometer applications as used in the study of convection and conduction heat-transfer systems 1005

COUPLINGS
Torsional vibration notes with solutions for an untuned viscous damper and a flexible coupling with nonlinear elasticity (A) ... 832

CRACKING. *See* PETROLEUM REFINING

CRAEMER, HERMANN
Theory of plastic bending from a statistical aspect (A) ... 834

CRAIG, JAMES
Obituary ... 272

CRANKSHAFTS
Investigation on the hydrogen foam from the shrunk-on part of web and journal of the Diesel-engine crankshafts (A) ... 832

CREEP OF MATERIALS. *See also* METAL CREEP
Deflection and stresses in beams subjected to bending and creep (A) ... 670

CRITICAL SPEEDS. *See* VIBRATION

CROFT, H. O.
Effect of high-frequency sound waves on an air-propane flame (A) ... 236

CROSS, HARDY
Engineers and Ivory Towers; selections from his speeches and writings (BR) ... 760

CROSSLEY, F. R. E.
Forced oscillation of the centrifugal pendulum with wide angles (A) ... 923
Free oscillation of the centrifugal pendulum with wide angles (A) ... 593

CRUCIBLES. *See* FOUNDRY PRACTICE

CRUMB, C. B., JR.
Engineering uses of analog computing machines ... 635

CRUMP, NORRIS R.
Biography ... 69
Honorary Member of ASME ... 69

CUBBERLY, ROBERT
Design and application of waste-heat boilers ... 480

CULLEN, R. E.
Nondimensional correlation of flame propagation at subatmospheric pressures (A) ... 668

CUNNINGHAM, J. F.
Appointed chairman of TV Committee ... 853

CUTTING. *See* WELDING AND CUTTING

CUTTING FLUIDS. *See* METAL CUTTING

CYLINDERS
Partially plastic thick-walled cylinder theory (A) ... 35

CZOCK, JACOB HENRY
Obituary ... 704


# D


DALY, EDMUND JOSEPH
Obituary ... 862

DAMPING. *See* VIBRATION

DANIELS, FRED HAROLD
Biography ... 1045
Elected Fellow of ASME ... 1045

DANIELSEN, JOHN E.
Obituary ... 862

DARLING, H. E.
High-pressure wire gage using gold-chrome wire (A) ... 834

DASSO, DAVID
Obituary ... 704

DATSKO, JOSEPH
Relative abrasiveness of the cast surfaces of various gray-iron castings on single-point tools of high-speed steel (A) ... 303

DAUGHERTY, FRANK
Obituary ... 774

DAVIES, C. E.
Life trustee of Rensselaer Polytechnic Institute ... 263

DAVIS, CHARLES BAKER
Obituary ... 862

DAVIS, E. A.
Problems in storing and handling pulverized materials (D) ... 245

DAVIS, GEORGE MARLIN
Obituary ... 862

DAVIS, L. E.
How to chart time-study data (BR) ... 81

DAY, JAMES ARTHUR
Obituary ... 704

DEFORMATION. *See also* STRESSES AND STRAINS
Bending of elastoplastic circular plates with large deflection (A) ... 508
Large plastic deformations of beams under transverse impact (A) ... 594

DEGNEN, WILLIAM J.
Orthoflow fluid catalytic-cracking units—their design and operation (A) ... 102

DE HAVILLAND, GEOFFREY
Receives Daniel Guggenheim Medal ... 849

DEHYDRATION
Conditioning of natural gas ... 563

DEJUHASZ, K. J.
Awarded Certificate of Appreciation for patriotic civilian service to the Department of the Army ... 421

DEL MAR, B.
Use of honeycomb panel construction in military lightweight trailers (A) ... 406

DE LORENZI, OTTO
Influence of low-quality coal on design and operation of pulverized-coal-fired units (A) ... 925

DEN HARTOG, J. P.
Biography ... 71
Receives Worcester Reed Warner Medal 71

DENNIS, W. R.
Study of burner oscillations of the organ-pipe type (A) ... 593

DERBY, ELLES M.
Systems analysis for effective administration (BR) ... 517

DETONATION. *See* COMBUSTION

DE VALLIERE, RENÉ
Receives Wallace Clark Award ... 263

DEXTER, GREGORY M.
Older engineers should be employed to relieve shortages (C) ... 166

DIAMONDS
Diamond-drill performance (A) ... 501
New standards for industrial diamonds. 526

DICKINSON, H. W.
Biography ... 275

DIESEL ENGINES. *See also* AIRPLANE ENGINES, LOCOMOTIVES, DIESEL
567 series Diesel engine (A) ... 140
Lightweight Diesel engine (A) ... 143
Lightweight Diesels (A) ... 910
Lubrication problems in design of heavy-duty engines (A) ... 829

DISKS. *See* ROTORS

DOAN, GILBERT E.
Professional focus (C) ... 80
Stronger engineering graduates ... 877

DOBERSTEIN, S. C.
Heat transfer and fluid friction during flow across banks of tubes—IV, a study of the transition zone between viscous and turbulent flow (A) ... 237

DOLAN, THOMAS J.
Receives Templin Award ... 602

DOMESTIC HEATING
Field tests of oil and gas residential space heating (A) ... 506

DONOVAN, J. T.
Coal and coal-paste preparation and transfer problems for hydrogenation service (A) ... 927
Corrosion and erosion in the synthetic-fuels demonstration plant (A) ... 928
Design and development of high-pressure injection pumps for hydrogenation service (A) ... 36

DORNBROOK, FREDERICK L.
Biography ... 611
Elected Fellow of ASME ... 611

DORSEY, E. G., JR.
Static-dynamic load machine for high pressure (A) ... 835

DOWNS, J. E.
Thermal performance of turbines (D) ... 671

DRAFT GEARS. *See* RAILROAD CARS, RAILROAD TRAINS

DRAFTING
Standardization of drafting practice ... 176

DRAKE, CLAUDE E.
Comparative costs and operation of carbide-tipped saws (A) ... 155

DRAKE, D. W.
Friction surfaces for spin-up simulation in landing-gear drop tests (A) ... 405

DRAKE, G. FORREST
Development of gas-turbine controls (A) 923

DRAKE, R. M.
Heat transfer from spheres to a rarefied gas in supersonic flow (A) ... 160
Local heat-transfer coefficients on the surface of an elliptical cylinder in a high-speed air stream (A) ... 668

DRAKE, W. V.
Special features at Milesburg Power Station (A) ..... 758

DRAPER, CHARLES S.
Receives testimonial of appreciation from IIR Division ..... 63

DRAW BENCHES. *See* METAL FORMING

DRESSLER, R. G.
Recent developments and results at the gas-synthesis demonstration plant, Louisiana, Mo. (A) ..... 928

DREWRY, M. K.
Methods of storing coal (D) ..... 412
Reheat experiences at Port Washington (A) ..... 153

DRILLING. *See* PETROLEUM-WELL EQUIPMENT

DRILLS. *See* DIAMONDS

DRIVES
Industrial gear drives (A) ..... 744

DRUCKER, D. C.
Safety factor of an elastic-plastic body in plane strain (A) ..... 35

DU BOIS, T. RANDALL
Moral concepts in war production (D) .. 514

DUBRUCQ, RAY C.
Woodworking machinery manufacturers look at carbide-tool cutting (A) ..... 155

DUDLEY, D. W.
Shotpeening of gears (D) ..... 79

DUNSFORD, JAN RUBIDGE
Obituary ..... 1054

DURBON, WILLIAM K.
Developments in cushioned underframes (A) ..... 757

DURHAM, F. P.
Supersonic flow with variable specific heat (A) ..... 156

DUSHKES, S. Z.
Analysis of some hydraulic components used in regulators and servomechanisms (A) ..... 159

# E

EAGAN, T. E.
Design of gray-iron castings ..... 115

EBERLE, F.
Experimental superheater for steam at 2000 psi and 1250 F—Progress report of field operation (A) ..... 154

ECONOMICS. *See also* EQUIPMENT REPLACEMENT, PRICES AND PRICE CONTROLS
Defense without inflation—or inflation without defense ..... 312
Economic situation in the U. S. (A) ..... 219
Organising cost reduction ..... 551
Rediscovering America ..... 131

EDITORIALS
ASME Boiler Code ..... 541
ASME development fund ..... 106, 445
Centennial of Engineering ..... 105, 357
Chicago—1893 and 1952 ..... 445
H. W. Dickinson; engineering historian. 275
ECPD training program ..... 866
Heald at N.Y.U. ..... 188
Dexter S. Kimball ..... 961
Next century of engineering ..... 626
One hundred years ..... 188
Scrap ..... 106
Specialization ..... 707
Theme for the Centennial ..... 541
Top executive speaks ..... 865
Tribute to applied mechanics ..... 625
Two days at the Centennial ..... 779
Unity soon? ..... 187

EDMISTER, WAYNE C.
Thermodynamics of gasification of coal with oxygen and steam (A) ..... 39

EDUCATION. *See also* INDUSTRIAL TRAINING
Adequacy and standards of engineering curricula ..... 15
ASEE solicits teaching aids ..... 175
ASTE launches student-aid plan ..... 431
Applications for Sloan Fellowships at M.I.T. ..... 178
Building a company with engineering graduates ..... 447
Dexter S. Kimball (Ed) ..... 961
Educational opportunities for engineers announced ..... 854
Engineering-college enrollment (A) ..... 219
Engineering student registration in Canada ..... 178
ECPD training program (Ed) ..... 866
Engineers need training in literature use 949

EDUCATION (*continued*)
Fellowships at Stevens Institute ..... 431
G-E education plan under way ..... 432
Heald at N. Y. U. (Ed) ..... 188
More science training needed in U. S. (A) ..... 175
NCSBEE special committee reports on evaluation of teaching ..... 1040
New University Center being constructed in Mexico City ..... 760
Novel visual approach in technical education used by steel founders ..... 854
Project work for industrial-engineering students (A) ..... 411
Stronger engineering graduates ..... 877
Technical institutes (A) ..... 752
20 colleges participate in Columbia plan 432
What the engineering college will and will not do for the student ..... 217
Women's colleges and industry could help meet the manpower shortage (A) 947

EDWARDS, P. L.
High-speed high-pressure gage (A) ..... 1030

EKLUND, P. R.
Some performance characteristics of ball and roller bearings for aviation gas turbines (A) ..... 37

ELASTICITY
Elastic sphere under concentrated loads (A) ..... 833
On the axisymmetric problem of the theory of elasticity for an infinite region containing two spherical cavities (A) ..... 34
Thermal stresses in bodies exhibiting temperature-dependent elastic properties (A) ..... 834
Torsional vibration notes with solutions for an untuned viscous damper and a flexible coupling with nonlinear elasticity (A) ..... 832

ELECTRIC ANALOGY
Pulsations in gas-compressor systems (A) ..... 33

ELECTRIC MOTORS
Fractional-horsepower motors (A) ..... 326

ELECTRICAL MACHINERY
Magamp regulation (A) ..... 915

ELECTRIFICATION. *See* POWER SYSTEMS

ELECTRODES. *See* WELDING

ELLIOTT, BEN GEORGE
Biography ..... 689
Nominated for Regional Vice-President 689

ELLIOTT, DAVID
Receives ARS Student Award ..... 63

ELLIOTT, M. A.
Thermodynamics of gasification of coal with oxygen and steam (A) ..... 39

ELLIS, WILLIAM CHARLEWOOD
Obituary ..... 100

ELMENDORF, ARMIN
Economics of hardboard manufacture (A) ..... 334
Furniture core panels of wood waste (A) 925

ELROD, H. G., JR.
Investigation of electromagnetic flowmeters (A) ..... 33

ELSASSER, T. M.
Effect of slightly elevated-temperature treatment upon microscopic and submicroscopic residual stresses induced by small inelastic strains in metals (A) 589
Influence of aging on the Bauschinger effect in inelastically strained beams (A) ..... 589

ELSNER, WILLIAM H.
Obituary ..... 862

ELSTON, C. W.
Comparative efficiencies of central station reheat and nonreheat steam turbine-generator units (A) ..... 152

ELY, F. G.
Experimental superheater for steam at 2000 psi and 1250 F—Progress report of field operation (A) ..... 154

EMBREE, JOHN M.
Systematic design approach using block-diagram analysis (A) ..... 504

EMPLOYMENT
Building a company with engineering graduates ..... 447
Demand for engineers greater than ever (A) ..... 607
Demand for engineers increases (A) ..... 262
Extensive opportunities for engineers in the coal industry ..... 852
Government employs engineers too ..... 533
Guide posts to an engineering career ..... 973
Mechanical engineers in electric-utilities industries ..... 617

EMPLOYMENT (*continued*)
Older engineers should be employed to relieve shortages (C) ..... 166
Top executive speaks (Ed) ..... 865
What are the opportunities in engineering and science? ..... 473
When to change jobs ..... 348

ENDEAN, HOWARD J.
Investigation of the bit forces in rotary drilling and their measurement with a bottom-hole weight indicator (A) ..... 1028

ENERGODYNAMICS. *See* THERMODYNAMICS

ENGELBERGER, J. F.
Application of temperature control to turbojet engines (A) ..... 923

ENGINE COOLING SYSTEMS
Engine cooling at elevated temperatures with vapor phase (A) ..... 832

ENGINE PREHEATERS
Engine preheating equipment for Diesel or gasoline engines (A) ..... 662

ENGINE STARTERS
Gasifier (A) ..... 823

ENGINEERING. *See also* TECHNOLOGY
Centennial of Engineering (Ed) ..... 105
Centennial of Engineering; officers elected ..... 253
Centennial of Engineering to have world-wide scope ..... 342
Data book for civil engineers (BR) ..... 518
Engineering achievements in Switzerland and their background (correction) ..... 246
Engineering achievements of the past century (A) ..... 232
Engineering service in the coal industry (A) ..... 40
Engineers and ivory towers (BR) ..... 760
Fuel and engineering consulting service for small plants (A) ..... 39, 40
Method in engineering ..... 951
Next century of engineering (Ed) ..... 626
One hundred years (Ed) ..... 188
Pittsburgh Mechanical-Engineering Conference to stress conservation ..... 258
Pledge of faith in America's future; science and technology in a time of challenge ..... 980
Project work for industrial-engineering students (A) ..... 411
Specialization (Ed) ..... 707
Top executive speaks (Ed) ..... 865
United States Centennial of Engineering 171
What's in it for me? ..... 771

ENGINEERING EDUCATION. *See* EDUCATION

ENGINEERING PROFESSION
Guide posts to an engineering career ... 973
Professional focus (C) ..... 80
Report of Exploratory Group to consider the increased unity of the engineering profession, December, 1951 ..... 255
Societies represented in and members of the Exploratory Group ..... 255
Tau Beta Pi discusses unity of engineering profession ..... 527
Unity in the engineering profession (C). 599
Unity soon? (Ed) ..... 187

ENGINEERING PUBLICATIONS
"The Engineering Index," 1928–1949, reprinted ..... 434
Manpower-shortage transcripts available ..... 264
New engineering literature ..... 176, 433, 533, 949, 1047
Steel products manual; Section 22, Forged axles and locomotive forgings 267
Technical literature (C) ..... 598

ENGINEERING SOCIETIES. *See also* UPADI
Chicago—1893 and 1952 (Ed) ..... 445
Council of Engineering Societies Secretaries holds meeting in Chicago ..... 941
Engineers Joint Council acts on unity program ..... 616
Is there strength in unity? (A) ..... 608
Meetings of other societies ..... 90, 177, 252, 346, 421, 430, 532, 614, 697, 772, 853, 950, 1043, 1047
Operations Research Society of America founded ..... 614
Societies represented in and members of the Exploratory Group ..... 255
U. S. and Latin engineers plan New Orleans meeting ..... 603

ENGINEERING SOCIETIES LIBRARY
ESL operations featured in colorful slide show ..... 948

ENGINEERING SOCIETIES PERSONNEL SERVICE, INC.
Positions available ..... 98, 180, 268, 349, 438, 534, 618, 700, 772, 858, 954, 1050

ENGINEERS
Bringing the engineering viewpoint to bear on public affairs; a realistic approach ..... 967

ENGINEERS (*continued*)
Developing an engineer ... 179
Engineers must be utilized to the best advantage ... 609
Engineers need training in literature use ... 949
Engineers urged to take part in public affairs ... 607
Faith of an engineer's wife (C) ... 336
How to make the best use of consulting engineers ... 215
Dexter S. Kimball (Ed) ... 961
Modern American engineers (BR) ... 931
Public relations and engineers ... 740
Stronger engineering graduates ... 877
Technology in a troubled world ... 784
U. S. engineers are urged to publicize their work ... 614

ENGINEERS' COUNCIL FOR PROFESSIONAL DEVELOPMENT
Annual report for 1951 ... 174
Annual Meeting, 1952 ... 942

ENGINEERS' EARNINGS
Employers of professional engineers cautioned regarding wage stabilization ... 1040
Evening engineering students at Cooper Union who are employed by day ... 436

ENGINEERS JOINT COUNCIL
Acts on unity program ... 616
Annual meeting, 1952 ... 435
Discusses Centennial, manpower, and international relations at September meeting ... 953
Discusses international relations, water policy, and unity ... 91
Discusses unity report ... 254
Manpower utilization and national security; a statement by the Engineering Manpower Commission of Engineers Joint Council ... 892
Officers for 1952 ... 173
To participate in Third UPADI Congress ... 529

ENGINEERS' REGISTRATION
Swiss register of engineers (C) ... 517

ENGINES
Free-piston engine development—present status and design aspects (A) ... 409

ENGINES—GAS
Combustion fundamentals of heavy-duty gas engines (A) ... 830
Electrical ignition of high-compression engines (A) ... 830
Lubrication problems in design of heavy-duty engines (A) ... 829
Recent developments in spark-ignition gas engines (A) ... 829

ENGINES—GASOLINE
Industrial engines standardized ... 562

ENGINES—INTERNAL-COMBUSTION. *See also* MANIFOLDS
Internal-combustion-engine industry congress plans announced ... 852
Optimalizing control systems (A) ... 145

ENNIS, ROBERT L.
Obituary ... 774

EQUIPMENT REPLACEMENT
Choosing new machinery and equipment ... 716
Economics and philosophy of choosing new machinery and equipment (A) ... 666

ESHBACH, OVID W.
Elected president of Western Society of Engineers ... 849

ETHICS
Promoting ethics in government (C) ... 80

EUROPE
MSA advisory group on European productivity named ... 253

EVANS, DANIEL EDWARD
Obituary ... 352

EVANS, T. H.
Unity in the engineering profession (C) ... 509

EVAPORATORS
Field testing of steam sampling nozzles as applied to evaporator vapor (A) ... 331

EVERETT, HAROLD ARTHUR
Biography ... 611
Elected Fellow of ASME ... 611

EWART, J. N.
First year's operation of the Dunkirk Steam Station (A) ... 153

EXHAUST. *See* MANIFOLDS

EXPLOSIONS. *See also* COMBUSTION
Progressive-wave approach to the theory of blast shock (A) ... 508

EXPLOSIVES
Vibratory explosives for the improvement of water-well yield (A) ... 657

EXTRUSION. *See* METAL EXTRUSION


# F


FAIRLESS, B. F.
Awarded John Fritz Medal ... 530

FALK, HAROLD SANDS
Biography ... 1045
Elected Fellow of ASME ... 1045

FATIGUE OF WORKERS
Relationship between industrial fatigue, accidents, and production (A) ... 334

FAULDERS, CHARLES R.
Interferometric investigation of the flow through a cascade of turbine nozzle blades (A) ... 668

FEE, J. H.
Indicating gages (D) ... 246

FEEDWATER TREATMENT. *See also* WATER ANALYSIS
Correlation of silica carry-over and solubility studies (A) ... 330
Operating experiences with 1250 gpm demineralizer water-treatment plant (A) ... 925

FEELEY, FRANK G., JR.
Operation of spreader stoker (D) ... 1034

FELLOWS, C. H.
Corrosion guide (BR) ... 167

FERRERIO, PIERO
The Italian power industry ... 721

FIALA, S. N.
Development and implementation of a generation program on the American Gas and Electric Company System [II]—200,000 kw, 2000 psi, 1050 F–1050 F—An advance in the economics of integrated power system generation (A) ... 240
Twenty-five years of reheat operating experience on the A. G. & E. system (A) ... 154

FILING SYSTEMS
Suggested filing system for keeping abreast of technical literature and general information of interest to the engineer ... 647

FILTRATION
Effects of solid inclusions in the oil supply to sleeve bearings (A) ... 592

FINCH, J. K.
Wren: His work and times BR) ... 413

FINCK, HERBERT FERDINAND JOHN, JR.
Obituary ... 440

FINCK, ROY WILLIAM
Obituary ... 352

FINK, C. H.
Flow through two orifices in series (A) ... 158

FINK, GEORGE RUPERT
Biography ... 71
Receives Holley Medal ... 71

FINNIE, I.
Shear-angle relationship in metal cutting (A) ... 666

FINNIE, RICHARD
Design and construction of Pacific Gas and Electric Company's 34-in. gas line (A) ... 505

FIRE-FIGHTING EQUIPMENT
Air foam systems (A) ... 578

FISHER, HARMON FRANCIS
Obituary ... 622

FISHER, PHILIP STEPHEN, JR.
Obituary ... 538

FLAMES AND FLAME PROPAGATION. *See* COMBUSTION, GASES

FLATOW, WALTER W.
Obituary ... 704

FLEISCHHAUER, E. T.
Static-dynamic load machine for high pressure (A) ... 835

FLOOD CONDITIONS. *See* POWER PLANTS—STEAM

FLOW OF FLUIDS. *See also* FLUID METERS, SUPERSONIC FLOW
Contributions to hydraulic control
1—Steady-state axial forces on control-valve pistons (A) ... 38
2—Transient-flow forces and valve instability (A) ... 38
Convective heat-transfer and flow-friction behavior of small cylindrical tubes—circular and rectangular cross sections (A) ... 237
Heat-transfer and flow-friction characteristics of some compact heat-exchanger surfaces, Part 3—Design data for five surfaces (A) ... 236
Heat transfer and fluid friction during flow across banks of tubes—IV, a study of the transition zone between viscous and turbulent flow (A) ... 237

FLOW OF FLUIDS (*continued*)
Heat transfer and pressure drop for turbulent flow of air-water mixtures in a horizontal pipe (A) ... 237
Interferometric investigation of the flow through a cascade of turbine nozzle blades (A) ... 668
Investigation of annular liquid flow with concurrent air flow in horizontal tubes (A) ... 508
On asymmetric flow in an axial-flow compressor stage (A) ... 923
Pressure drops in the pneumatic conveyance of solids (A) ... 508
Problems in storing and handling pulverised materials (D) ... 245
Symmetric turbulent mixing of two parallel streams (A) ... 922

FLUID MECHANICS
Midwest fluid mechanics conference ... 434

FLUID METERS
Design and application of controlled-volume pumps for high pressure in the range of 10,000 to 30,000 psi (A) ... 835
Design of a square-root-extracting, force balance, pneumatic transmitter including derivation of formulas (A) ... 923
Discharge coefficients of Herschel-type Venturi tubes (A) ... 158
Discharge measurements by means of cylindrical nozzles (A) ... 156
Displacement meters code ... 433
Flow through two orifices in series (A) ... 158
How to obtain instrument accuracy with proportioning pumps (A) ... 150
Investigation of electromagnetic flowmeters ... 33
Linear-resistance meters for liquid flow (A) ... 33
Orifice and flow coefficients in pulsating flow (A) ... 158

FLUOROCARBON. *See* PLASTICS

FLYNN, CHARLES ANDREW
Obituary ... 100

FOAM. *See* FIRE-FIGHTING EQUIPMENT, GASES, PACKAGING

FONG, JAMES T.
Optimum crossflow heat exchangers (A) ... 238
Optimum design for surface condensers for steam-power plants (A) ... 924

FORGINGS
Pressures required for thin press forgings (A) ... 405

FORRY, D. R.
Design of flat-wound tension springs (A) ... 38

FORSTALL, ALFRED EDMOND
Obituary ... 862

FOSS, OLIVER
Function of a bootstrap G-T unit in university work (A) ... 408

FOSTER, G. M.
Design of a semiautomatic gaging-and-sorting machine (AC) ... 246

FOSTER, WILLIAM C.
Technology in a troubled world ... 784

FOUNDRY PRACTICE
Crucible graphite study (A) ... 1014
Design of gray-iron castings ... 115
Shell molding (A) ... 1016
Shell molding (A) ... 318
Versatile core boxes (A) ... 913

FOUSE, R. R.
Investigation of electromagnetic flowmeters (A) ... 33

FOX, ALFRED W.
Obituary ... 352

FOX, E. D.
Ammonium sulphate from refinery wastes (A) ... 1023

FRASER, O. B. J.
Awarded Samuel Wylie Miller Memorial Medal ... 1044

FRAZIER, CHARLES H.
Obituary ... 440

FREAS, A. D.
Effect of preloading and fatigue on mechanical properties of glass-cloth plastic laminates (A) ... 920

FREE PISTON. See ENGINES

FREEMAN, A. R.
Gaskets for high-pressure vessels ... (A) 836, 969

FREEMAN, J. W.
Rupture and creep characteristics of titanium-stabilized stainless steel at 1100 to 1300 F (A) ... 32

FREIGHT CARS. *See* RAILROAD CARS

FRICTION
Temperature development in a heated contact with application to sliding contacts (A) ... 834

FRISCH, MARTIN
Biography 611
Elected Fellow of ASME 611

FRITZSCHE, R. W.
Continuous viscosimetry (A) 757

FROESCH, CHARLES
Air freight handling operations (D) 837

FUELS. *See also* COAL, OIL FUEL, WOOD WASTE
Burning sulphite waste liquor (A) 410
Development and implementation of a generation program on the American Gas and Electric Company System, II—Fuel supply (A) 240
Economics of natural gas and liquefied petroleum gases 467
Recent developments and results at the gas-synthesis demonstration plant, Louisiana, Mo. (A) 928
The romance of power and fuels 812
Steel-works power plants (A) 924
Synthetic-fuels research (A) 827

FULTON, R. O.
Clearancemometer for determining blade-tip clearances of axial-flow compressors (A) 591

FUNK, MAX O.
How to select spreader-stoker equipment 457

FURNACES. *See* BOILER FURNACES, INDUSTRIAL FURNACES, IRON AND STEEL MANUFACTURE

FURNITURE. *See also* WOOD INDUSTRIES, WOOD WASTE
From handmade to mass-produced wood furniture (A) 926
Plywood is engineered wood 787


# G


GAGES. *See also* INSTRUMENTS—PRESSURE
American standard involute spline and serration gages and gaging 615
Indicating gages (D) 246

GALBREATH, P. J.
Honored by American Society of Lubrication Engineers 530

GALLAGHER, JOSEPH
Mathematical analysis of the relaxation type of vehicle suspension (A) 594

GALLIUM
Less familiar metals of commercial importance 3

GARDNER, G. D.
Corrosion and erosion in the synthetic-fuels demonstration plant (A) 928

GARDNER, K. A.
Heat-exchanger tube-sheet design—2 Fixed tube sheets (A) 35

GARY, FRANCIS PHINIZY
Obituary 1054

GARY, TOM C.
Organizing cost reduction 551

GAS ANALYSIS
Infrared carbon-monoxide gas analyzer—a tool for afterburning prevention (A) 756

GAS INJECTION. *See* PETROLEUM INDUSTRY

GAS TURBINES. *See also* AIRPLANE ENGINES, POWER PLANTS—GAS-TURBINE
Aircraft gas-turbine bearing lubrication (D) 512
Auxiliary gas-turbine engine (D) 515
*Bibliography of books and published reports on gas turbines, jet propulsion, and rocket power*, published by Bureau of Standards 266
Comparative performance of coals of different rank in a film-cooled gas-turbine generator (A) 303
Design and performance of an extended-surface regenerator for a gas-turbine plant (A) 235
Design factors in the development of a small high-heat-release combustor (A) 669
Design features of a 5000-hp gas turbine (A) 235
Design features of a 250-kw gas-turbine engine used as drive for shipboard emergency generator 197
Development of gas-turbine controls (A) 923
Fast thermocouples as control-system elements sensing exhaust-gas temperature in aircraft gas turbines (A) 591
Function of a bootstrap G-T unit in university work (A) 408
Gas-turbine's contribution to gas pipeline pumping (A) 234

GAS TURBINES (*continued*)
Interferometric investigation of the flow through a cascade of turbine nozzle blades (A 668
Operating experiences with stationary gas turbines 381
Pattern of gas-turbine development in Europe and the United States 627, (D) 1031
Peat-burning gas turbine (A) 201
Portable gas turbine (A) 26
Radial-flow compressors and turbines for the simple small gas turbine (A) 408
Review of optimum design of gas-turbine regenerators (A) 235
Waste-wood-fired gas-turbine power unit (A) 409

GASES. *See also* NATURAL GAS
Additional measurements of heat conductivity of nitrogen, carbon dioxide, and mixtures (A) 667
Combustion, flames, and explosions of gases (BR) 247
Contribution to the theory of the development and stability of detonation in gases (A) 156
Effect of high-frequency sound waves on an air-propane flame (A) 236
Flame velocities in carbon monoxide-oxygen mixtures (A) 755
Gas purification (A) 662
Investigation on the hydrogen foam from the shrunk-on part of web and journal of the Diesel-engine crankshafts (A) 832
Joule-Thomson coefficients for air at one atmosphere (A) 504
Progress report on the study of super-compressibility factors for natural gases (A) 158
Sonic-flow-orifice temperature probe in high-gas-temperature measurement (A) 669
Study of detonative phenomena in gaseous mixtures by the use of shock-tube techniques (A) 505

GASIFICATION. *See* COAL GASIFICATION

GASKETS
American Standard, Ring-Joint Gaskets and Grooves for Steel Pipe Flanges 856
Gaskets for high pressure vessels (A) 836, 969
Spiral-wound gaskets (A) 585

GASOLINE
Diesel fuel performance (A) 332
Direct-fired heaters in natural-gasoline plants, their application, specification, and selection (A) 1025
Economic aspects of natural-gasoline production on the lease (A) 1027
Orthoflow fluid catalytic-cracking units—their design and operation (A) 1029

GASS, KARL WILLIAM
Obituary 862

GATES, ROBERT M.
Biography 69
Honorary member of ASME 69

GEARS. *See also* DRIVES
Shotpeening of gears (D) 79

GEORGE, VINCENT C.
Obituary 440

GERARD, GEORGE
Linear bending theory of isotropic sandwich plates by an order of magnitude analysis (A) 33

GERMANIUM
Less familiar metals of commercial importance 3

GERMANY
German manganese research (A) 752

GEUE, JOHN E.
Training power-plant employees on the American Gas and Electric System (A) 665

GIBBS, JOSIAH WILLARD
Josiah Willard Gibbs: The history of a great mind (BR) 247

GIBSON, FREDERICK MONTAGUE
Obituary 704

GIFFORD, A. G.
Extrusion of plastics, rubber, and metals (BR) 600

GILBRETH, LILLIAN M.
Awarded honorary DS degree by Lafayette College 1044

GILROY, T. I.
Stresses and deformations of toroidal shells of elliptical cross section (A) 34

GITTLER, HARVEY
Statistical techniques in time study (D) 336

GLENNAN, T. KEITH
Industry and the atom 123

GLUES AND GLUING. *See* ADHESIVES

GOEBEL, G. L.
Highway trailer rail service (A) 35

GOETZENBERGER, R. L.
Biography 691
Nominated for Director at Large 690

GOLDBERG, ARNOLD
Design of a square-root-extracting, force balance, pneumatic transmitter including derivation of formulas (A) 923

GOLDEN, P. L.
Sensitive pressure controller for high-pressure service (A) 836

GONGWER, C. A.
Study of vanes singing in water (A) 593

GONTHIER, H. A.
Swiss register of engineers (C) 517

GOODPASTURE, R. C.
Modern American engineers (BR) 931

GOVERNMENT
Engineers urged to take part in public affairs 607
The retreat from freedom 135

GOVERNORS
Use of the centrifugal governor mechanism as a torsional vibration absorber (A) 667

GRAHAM, P. H.
Profitable by-products from wood manufacturing waste (A) 154

GRANT, PAUL C., JR.
Opening and picking by the Whitin system (A) 161

GRAPHICAL METHODS
Direct graphical evaluation of radiation form factor (A) 921
Nomograms as tools to facilitate the solution of engineering formulas (A) 667

GRAPHITE. *See* FOUNDRY PRACTICE

GRASSI, R. C.
Deformation work absorbed by the workpiece during metal cutting (A) 919

GRAY, C. A. M.
Analysis of fully restrained slabs under concentrated loads (A) 922

GRAY, HARRY
Obituary 100

GRAY, I. A.
Turbojet transports—the "Comet" (D) 244

GREACEN, WALTER, 3RD
Biography 612
Elected Fellow of ASME 612

GREAT BRITAIN
British aviation (A) 750
British Industries Fair, 1952 173

GREEHLER, PAUL
Heat transfer by gas conduction and radiation in fibrous insulations (A) 159

GREEN, LEON, JR.
Correlation of creep properties by a diffusion analogy (A) 759
Gas cooling of a porous heat source (A) 157

GREENBERG, H. J.
Safety factor of an elastic-plastic body in plane strain (A) 35

GREENE, ARTHUR M., JR.
The ASME Boiler Code
I—Introduction—The antecedents of—the code 555
II—ASME sets up Boiler Code Committee and adopts Code of 1914 640
III—The administration of the first code—1915–1918 727
IV—ASME expands the boiler code—1919–1924 807
V—Administration of the 1924 edition of the Power Boiler Code—1925–1927 996

GREENFIELD, BENJAMIN
Obituary 352

GRIDS. *See* STRUCTURES

GRIFFIN, FRED SWIGART
Biography 97
Elected Fellow of ASME 97

GRIFFITH, PALMER W.
Receives John Wesley Hyatt Award 610

GRIMALDI, J. V.
Relationship between industrial fatigue, accidents, and production (A) 334

GRIMM, ELIZABETH J.
Adaptation of the spectrophptometric determination of small amount of soluble silica in water to the determination of undissolved forms of silica (A) 332
Spectrophotometric determination of small amounts of soluble silica in water (A) 331

GRINDING. *See* METAL CUTTING

GROOM, JOSEPH HOWARD
Obituary 182

GRUBER, C. W.
Design, installation, application of fuel-burning equipment for 25 to 500 hp range, to prevent air pollution (A) 506

GUIDED MISSILES
Digital automatic computer to help develop guided missiles (A) 914
Guided missiles and new weapons (A) 751

GUIDON, MICHAEL
Function of a bootstrap G-T unit in university work (A) 408

GULSHEN, FRANK JOSEPH
Obituary 352

GYROCOMPASS. *See* INSTRUMENTS—GYROSCOPIC.


# H


HAFNIUM
Less familiar metals of commercial importance 3

HAGUE, F. T.
Pattern of gas-turbine development in Europe and the United States ... 627, 1033

HAGUE, ROBERT WILTON
Obituary 182

HAHN, R. S.
Some observations on chip curl in the metal-cutting process under orthogonal cutting conditions (A) 919

HAIN, G. M.
Measuring the cooling properties of cutting fluids (A) 31

HALE, TAYLOR
Obituary 622

HALL, A. M.
Behavior of superheater tubing materials in contact with combustion atmospheres at 1350 F (A) 32

HALL, NEWMAN A.
Appointed director of Engineering Sciences Division, Office of Ordnance Research 949
Orifice and flow coefficients in pulsating flow (A) 158

HAMILTON, RAY L.
Design and construction of Pacific Gas and Electric Company's 34-in. gas line (A) 505

HAMMER, EDWIN WESLEY
Obituary 100

HAMMOND, H. P.
What the engineering college will and will not do for the student 217

HAMRICK, J. T.
Some investigations with wet compression (A) 506

HANDLEY, L. R.
Pulsations in gas-compressor systems (A) 33

HARBERT, L. C.
Engine cooling at elevated temperatures with vapor phase (A) 832

HARDBOARDS
Economics of hardboard manufacture (A) 334
Synthetic lumber (A) 821

HARRINGTON, J. P.
Effect of velocity on tensile impact properties of polymethyl methacrylate (A) 161

HAUBRATH, A. H.
Large deflections of circular plates (A) 509

HAWKINS, G. A.
Suggested filing system for keeping abreast of technical literature and general information of interest to the engineer 647

HAY, EARL DOWNING
Biography 1046
Elected Fellow of ASME 1046

HAYS, FRANK BELLCHAMBERS
Obituary 862

HAZEN, DEANE STANLEY
Obituary 538

HEADRICK, A. F.
Sensitive pressure controller for high-pressure service (A) 836

HEALD, HENRY T.
Heald at N.Y.U. (Ed) 188
Receives Washington Award ... 343, 421

HEAT-EXCHANGE EQUIPMENT
Design of heat exchangers for minimum irreversibility (A) 237
Heat-exchanger tube-sheet design—2 Fixed tube sheets (A) 35

HEAT-EXCHANGE EQUIPMENT (*continued*)
Modern high-pressure high-temperature boilers. 2—Present trends and considerations in steam-temperature controls—reheat boilers 878
Optimum crossflow heat exchangers (A) 238
Performance of finned tubes in shell-and-tube heat exchangers (A) 668
Welded heat-exchanger tubes (A) 1015

HEAT-INSULATING MATERIALS
Heat transfer by gas conduction and radiation in fibrous insulations (A) 159
Low-temperature insulation for refinery service (A) 1026
New procedures in industrial thermal-insulation application (A) 1029

HEAT PUMPS
Design factors for industrial heat-pump installations 280

HEAT TRANSFER
Additional measurements of heat conductivity of nitrogen, carbon dioxide, and mixtures (A) 667
Convective heat-transfer and flow-friction behavior of small cylindrical tubes—circular and rectangular cross sections (A) 237
Determination of local forced-convection coefficients for spheres (A) 921
Direct graphical evaluation of radiation form factor (A) 921
Gas cooling of a porous heat source (A) 157
Heat-transfer and flow-friction characteristics of some compact heat-exchanger surfaces. Part 3—Design data for five surfaces (A) 236
Heat transfer and fluid friction during flow across banks of tubes—IV, a study of the transition zone between viscous and turbulent flow (A) 237
Heat transfer and pressure drop for turbulent flow of air-water mixtures in a horizontal pipe (A) 237
Heat transfer by gas conduction and radiation in fibrous insulations (A) 159
Heat transfer from spheres to a rarefied gas in supersonic flow (A) 160
Influence of unheated starting sections on the heat transfer from a cylinder to gas streams parallel to the axis (A) 920
Investigation of heat transfer from an inclined flat plate in free convection (A) 921
Local coefficients of mass transfer by evaporation of water into an air jet (A) 504
Local heat-transfer coefficients on the surface of an elliptical cylinder in a high-speed air stream (A) 668
Mach-Zehnder interferometer applications as used in the study of convection and conduction heat-transfer systems 1005
Method of correlating heat-transfer data for surface boiling of liquids (A) 237
Temperature development in a heated contact with application to sliding contacts (A) 834

HEAT TRANSFER AND FLUID MECHANICS INSTITUTE
Annual meeting, 1952 430, 1047

HEAT TREATMENT
Quenching studies (A) 25

HEATH, W. C.
Cited by Armed Services 259

HEBLEY, HENRY F. J.
Biography 612
Elected Fellow of ASME 612

HEFLIN, G. W.
Air freight handling operations (D) 837

HEGENBARTH, FRANCIS
Obituary 440

HEISING, C. R.
Fast thermocouples as control-system elements sensing exhaust-gas temperature in aircraft gas turbines (A) 591

HELICOPTERS
Collapsible helicopter (A) 496
Design proposal for a military helicopter 709

HELM, PAUL FRANK
Obituary 862

HELTZEL, WILLIAM GILLUM
Biography 97
Elected Fellow of ASME 97

HEMENWAY, HENRY H.
Some design factors relating to performance and operation of reheat boilers (A) 153

HEMMERLE, GEORGE FREDERICK
Obituary 184

HEYMAN, JACQUES
Limit design of a transversely loaded square grid (A) 670

HEYWOOD, HAROLD LESTER
Obituary 100

HIEBELER, HARRY C.
Outdoor power station in South Texas (A) 924

HIGGINS, STEPHEN P., JR.
Systematic design approach using block-diagram analysis (A) 504

HIGH-ALTITUDE RESEARCH
New method for gathering facts about the weather (A) 741

HIGH-PRESSURE RESEARCH
Design and application of controlled-volume pumps for high pressure in the range of 10,000 to 30,000 psi (A) 835
HRD Conference on high pressure 947
Static-dynamic load machine for high pressure (A) 835
Techniques and equipment for the generation of dynamic high pressures (A) 835

HIGH-TEMPERATURE MATERIALS
Experimental superheater for steam at 2000 psi and 1250 F—Progress report of field operation (A) 154

HILL, L. E., JR.
Hydraulic barking (A) 407

HILMER, OTTO ERNST
Obituary 184

HILTON, H. H.
Thermal stresses in bodies exhibiting temperature-dependent elastic properties (A) 834

HIRSCH, R. A.
Effect of a rigid circular inclusion on the bending of a thick elastic plate (A) 34

HISTORY
The ASME Boiler Code:
I. Introduction—The antecedents of the code 555
II. ASME sets up Boiler Code Committee and adopts code of 1914 840
III. The administration of the first code—1915–1918 727
IV. ASME expands the boiler code—1919–1924 807
V. Administration of the 1924 edition of the Power Boiler Code—1925–1927 996
Centennial of Engineering (Ed) 105
Century of engineering in wood preservation (A) 926
Chicago—1893 and 1952 (Ed) 445
H. W. Dickinson; engineering historian (Ed) 275
Engineering achievements of the past century (A) 232
Machine-tool builders (A) 1020
One hundred years (Ed) 188
Plywood is engineered wood 787
United States Centennial of Engineering 171
Woodworking machinery; history of development from 1852–1952 983
Wren: His work and times (BR) 413

HOEKSTRA, HAROLD D.
Air freight handling operations (D) 838

HOLLISTER, S. C.
Receives Lamme Medal 692

HOLM, DONALD R.
Selecting and training fork-truck operators 568, 1031

HOLM, RAGNER
Temperature development in a heated contact with application to sliding contacts (A) 834

HOLM, SVEN
Design and performance of an extended-surface regenerator for a gas-turbine plant (A) 235

HOLMES, H. J.
Comparison of parameters for the machining of gray cast iron (A) 31

HOLT, MARSHALL
Procedure for determining the allowable out-of-roundness for vessels under external pressure (A) 237

HONORS AND AWARDS
ARS Student Award 63
American Society for Metals' Gold Medal 849
ASM Medal for the Advancement of Research 849
ASTM Award of Merit 692
F. Paul Anderson Medal 263
Award given by National Society of Professional Engineers for distinguished service to the engineering profession 692
Thurman H. Bane Award 849

HONORS AND AWARDS (*continued*)
British Royal Aeronautical Society gold medal ... 530
Octave Chanute Award ... 849
Wallace Clark Award ... 263
Walton Clark Medal ... 849
Howard Coonley Medal ... 949
Elliott Cresson Medal ... 849
John Deere Gold Medal ... 610
Doehler Award Fund ... 264
Edison Medal ... 177
John Fritz Medal ... 530
Gantt Medal ... 610
Gilbreth Medal ... 1044
Goddard Memorial Lecture award ... 63
Daniel Guggenheim Medal ... 849
George R. Henderson Medal ... 949
C. N. Hickman Award ... 63
Hoover Medal ... 692
John Wesley Hyatt Award ... 610
Illuminating Engineering Society Gold Medal ... 949
Industrial Research Institute Medal ... 1044
Lamme Medal ... 692
K. C. Li Medal ... 610
Losana Gold Medal of the Italian Metallurgical Society ... 949
Cyrus Hall McCormick Gold Medal ... 610
James H. McGraw Award ... 692
Samuel Wylie Miller Memorial Medal ... 1044
Missouri Honor Award ... 421
"More Power to America Award," new prize announced by EEI ... 853
Musick Memorial Trophy ... 1044
Norman Medal ... 177
G. Edward Pendray award ... 63
William Penn Award ... 343
Photogrammetric Award ... 261
Calvin W. Rice Memorial Scholar ... 603
David Sarnoff Gold Medal Award ... 849
Albert Sauveur Achievement Award ... 949
Julian C. Smith Medal ... 343
Richard L. Templin Award ... 692
Washington Award ... 343, 421
Wright Brothers Medal ... 530
Wright Brothers Memorial Trophy ... 177

HOOPER, F. C.
Direct graphical evaluation of radiation form factor (A) ... 921

HOOVER, HERBERT
Receives citation as "the most illustrious member" of the engineering profession ... 177
Receives gold medal award at Northwest Engineers Centennial ... 849

HOPPMANN, W. H., 2ND
Forced lateral vibration of beam carrying a concentrated mass (A) ... 594

HOPWOOD, JOHN MAITLAND
Obituary ... 102

HORNER, O. J.
Economic study of roller bearings on freight cars (A) ... 159

HORNELL, D. C.
Design for extreme flood conditions at the Paddy's Run Station (A) ... 758

HORSTMAN, ELMER HENRY
Obituary ... 184

HORVAY, G.
Plane-stress problem of perforated plates (A) ... 834

HOSHALL, HARRY BENTON
Obituary ... 352

HOUSING
Unique house (A) ... 151

HOUSNER, G. W.
Bending vibrations of a pipe line containing flowing fluid (A) ... 593

HOWE, CLARENCE D.
Receives Hoover Medal ... 692

HOWE, R. J.
Some kinematic aspects of pumping-unit mechanisms (A) ... 37

HOWLAND, LEWIS ABNER
Obituary ... 862

HOYT, W. B.
Recent experience in examination of high-temperature catalytic-cracking pressure equipment (A) ... 36

HU, L. W.
Determination of theoretical plastic stress-strain relations for variable combined stress ratios (A) ... 833

HUANG, M. K.
Bending of a uniformly loaded rectangular plate with two adjacent edges clamped and the others either simply supported or free (A) ... 509
Bending of uniformly loaded sectorial plates with clamped edges (A) ... 33

HUBER, WALTER L.
Elected president of American Society of Civil Engineers ... 948

HUDSON, H. P.
Comparative performance of coals of different rank in a film-cooled gas-turbine generator (A) ... 503

HUFF, GEORGE FRANKLIN
Obituary ... 440

HUNSAKER, JEROME C.
Receives Wright Brothers Memorial Trophy ... 177

HUNT, G. M.
Century of engineering in wood preservation (A) ... 926

HYDRAULIC MACHINERY
Hydraulic barking (A) ... 407

HYDRAULIC PRESSES. *See* POWER PRESSES

HYDRAULIC TURBINES
Measurement of hydraulic-turbine vibration (A) ... 158
Recent developments in Francis turbines ... 189, (D) 510
Runaway speed of Kaplan turbines (A) ... 334

HYDRAULICS
Hydraulic transients (BR) ... 81
National Conference on Industrial Hydraulics, Chicago, 1952 ... 614

HYDRODYNAMICS. *See also* LUBRICATION
Hydrodynamic resistance of particles (A) ... 666

HYDROGEN. *See* GASES


# I


IGNITION
Electrical ignition of high-compression engines (A) ... 830

INCENTIVES. *See* WAGES AND WAGE INCENTIVES.

INDEXING. *See* FILING SYSTEMS

INDIUM
Less familiar metals of commercial importance ... 3

INDUSTRIAL DESIGN
Project work for industrial-engineering students (A) ... 411

INDUSTRIAL FURNACES
Controlled-atmosphere furnace (A) ... 317
Science of flames and furnaces (BR) ... 673

INDUSTRIAL PRODUCTIVITY
How to increase productivity in small plants ... 384
Incentives for better production effectiveness ... 573
Military production (A) ... 742
Moral and spiritual concepts in war production ... 128
Moral concepts in war production (D) ... 514
MSA advisory group on European productivity named ... 253
New production facilities; a brief survey of the machine-tool industry today ... 212
Relationship between industrial fatigue, accidents, and production (A) ... 334

INDUSTRIAL RELATIONS
New industrial revolution (C) ... 598
A $65 question: What's it like in "Heaven"? (BR) ... 118

INDUSTRIAL TRAINING
Selecting and training fork-truck operators ... 568, (D) 1033
Selecting and training personnel for centralized control power station (A) ... 665
Training an operating group for a second generating station (A) ... 665
Training of operating personnel for power plants with centralized control (A) ... 665
Training of young engineering graduates in industry ... 93
Training power-plant employees on the American Gas and Electric System (A) ... 665
Two new industrial-engineering films now available ... 772

INDUSTRIAL TRUCKS
Industrial power trucks safety code ... 176
Selecting and training fork-truck operators ... 568, (D) 1033

INDUSTRIAL WASTES
Ammonium sulphate from refinery wastes (A) ... 1023
Burning sulphite waste liquor (A) ... 410
Water-pollution by industry (D) ... 165

INDUSTRY
British Industries Fair, 1952 ... 973
Canadian industry (A) ... 654
Industrial expansion (A) ... 490
Industry and the atom ... 123
Industry's last chance to prevent Government control in the field of industrial safety ... 202

INDUSTRY (*continued*)
Military production (A) ... 742
Organizing cost reduction ... 551
Rediscovering America ... 131

INFLATION. *See* ECONOMICS

INGOTS
Production of largest steel ingot ever made in Great Britain (A) ... 726

INO, M.
Investigation on the hydrogen foam from the shrunk-on part of web and journal of the Diesel-engine crankshafts (A) ... 832

INSPECTION. *See also* NONDESTRUCTIVE TESTING
Indicating gages (D) ... 246
Photoelectric scanner (A) ... 913

INSTITUTE OF THE AERONAUTICAL SCIENCES
Honors prominent aeronautical engineers ... 260

INSTRUMENTS. *See also* STRAIN GAGES
ASME conference features shock and vibration instrumentation symposium ... 342
Process instrumentation (A) ... 579
Recording and Controlling Instruments Conference held in Philadelphia ... 948
Systematic design approach using block-diagram analysis (A) ... 504

INSTRUMENTS—ENGINE-TESTING
Direct-reading indicated power meter (A) ... 924

INSTRUMENTS—FLOW. *See* FLUID METERS, PUMPS—PROPORTIONING

INSTRUMENTS—GYROSCOPIC
Lightweight gyrocompass (A) ... 144

INSTRUMENTS—MEASURING
Clearancemeter for determining blade-tip clearances of axial-flow compressors (A) ... 591

INSTRUMENTS—OPTICAL
Interferometry (A) ... 1010
Mach-Zehnder interferometer applications as used in the study of convection and conduction heat-transfer systems ... 1005
Remote-control microscope (A) ... 28

INSTRUMENTS—PHOTOELECTRIC
Photoelectric scanner (A) ... 913

INSTRUMENTS—PRESSURE
High-pressure wire gage using gold-chrome wire (A) ... 834
High-speed high-pressure gage (A) ... 1030
Piston gage as a precise pressure measuring instrument (A) ... 835
Sensitive pressure controller for high-pressure service (A) ... 836
Techniques and equipment for the generation of dynamic high pressures (A) ... 835

INSTRUMENTS—RADIATION-DETECTING
Radioactivity instrument (A) ... 228

INSTRUMENTS—TEMPERATURE
Fast thermocouples as control-system elements sensing exhaust-gas temperature in aircraft gas turbines (A) ... 591
Instrumentation for axial-flow-compressor research (A) ... 591
Methods of measuring high temperatures in gas streams (A) ... 236
Sonic-flow-orifice temperature probe in high-gas-temperature measurement (A) ... 669

INSTRUMENTS—VISCOSITY
Continuous viscosimetry (A) ... 757

INSULATION. *See* HEAT-INSULATING MATERIALS

INTERFEROMETERS. *See* INSTRUMENTS—OPTICAL

INTERNATIONAL CONGRESS FOR APPLIED MECHANICS
To be held at Istanbul, Turkey, August, 1952 ... 171

INTERNATIONAL RELATIONS. *See also* UNESCO
Centennial of Engineering to have world-wide scope ... 342
Technology in a troubled world ... 784
U.S. and Latin engineers plan New Orleans meeting ... 603

IRON AND STEEL. *See also* INGOTS
Ductile-iron uses (A) ... 1012

IRON AND STEEL MANUFACTURE
Iron-oxide-ore behavior (A) ... 318
Ore-to-iron furnaces (A) ... 317
Pressure-operated furnaces (A) ... 18
Steel production (A) ... 320

IRON CASTINGS
Design of gray-iron castings ... 115

IRWIN, PAUL LAWRENCE
Obituary ... 102

ITALY
The Italian power industry ... 721

# J


JACKLIN, C.
Correlation of silica carry-over and solubility studies (A) 330

JACKSON, J. H.
Behavior of superheater tubing materials in contact with combustion atmospheres at 1350 F (A) 32

JACOBS, ALBERT C.
Pledge of faith in America's future; science and technology in a time of challenge 980

JACOBSON, RICHARD S.
Measurement of hydraulic-turbine vibration (A) 138

JACOBY, C. J., 3RD
Analysis of developments in automation (A) 666, 810

JACOBY, HENRY EDWARD
Obituary 862

JAKOB, MAX
Influence of unheated starting sections on the heat transfer from a cylinder to gas streams parallel to the axis (A) 920
Local coefficients of mass transfer by evaporation of water into an air jet (A) 504

JANSSEN, EARL
University of California's new aeronautics facilities (A) 406

JASPER, N. H.
Critical whirling speeds of shaft-disk systems (A) 921

JASPER, T. McLEAN
Technical literature (C) 598

JEHLE, FERDINAND
Biography 97
Elected Fellow of ASME 97

JESSOP, GEORGE A.
Developments in Francis turbines (D) 510

JET PROPULSION
"*Bibliography of books and published reports on gas turbines, jet propulsion, and rocket power,*" published by Bureau of Standards 266
Jet-engine center (A) 400
New jet engine (A) 402, 911
Russia's jet progress (A) 398
Turbojet aircraft—the Jetliner (D) 241
Turbojet transports—the "Comet" (D) 243

JOHNSON, D. P.
Piston gage as a precise pressure measuring instrument (A) 835

JOHNSON, D. W.
Heat-transfer and flow-friction characteristics of some compact heat-exchanger surfaces, Part 3—Design data for five surfaces (A) 236

JOHNSON, H. A.
Heat transfer and pressure drop for turbulent flow of air-water mixtures in a horizontal pipe (A) 237

JOHNSON, ROLPH
Engineering unity (C) 839

JONES, A. B.
Life of high-speed ball bearings (A) 37

JONES, DONALD H.
Design and application of controlled-volume pumps for high pressure in the range of 10,000 to 30,000 psi (A) 835

JONES, EDWARD STRATTON
Obituary 272

JONES, F. C.
Aircraft gas-turbine bearing lubrication (D) 513

JONES, LEWIS
Obituary 272

JONES, THOMAS ROY
Biography 75
Receives Gantt Medal 75

JORISSEN, A. L.
Discharge coefficients of Herschel-type Venturi tubes (A) 158
Discharge measurements by means of cylindrical nozzles (A) 158

JUHASZ, I. S.
Direct graphical evaluation of radiation form factor (A) 921

JUNGER, MIGUEL C.
Vibrations of elastic shells in a fluid medium and the associated radiation of sound (A) 509


# K


KAAR, PAUL H.
Method of obtaining shear stress-strain graphs by interpretation of moment-twist data (A) 922

KAMMER, H. A.
Development and implementation of a generation program on the American Gas and Electric Company System, II—Fuel Supply (A) 240

KAMMERHOFF, HEINRICH HERMANN MENO
Obituary 938

KANTER, J. J.
Receives ASTM Award of Merit 692

KARNEKULL, OLOF
Obituary 440

KATZ, DONALD L.
Performance of finned tubes in shell-and-tube heat exchangers (A) 668

KAUFFMANN, W. M.
Recent developments in spark-ignition gas engines (A) 829

KAYE, J.
Measurement of recovery factors and friction coefficients for supersonic flow of air in a tube (A) 156, 157
New method of calculation of reheat factors for turbines and compressors (A) 156

KAYS, W. M.
Convective heat-transfer and flow-friction behavior of small cylindrical tubes—circular and rectangular cross sections (A) 237
Heat-transfer and flow-friction characteristics of some compact heat-exchanger surfaces, Part 3—Design data for five surfaces (A) 236

KEARFOTT, A. J.
Properties of some heat-resistant adhesives 369

KEEN, J. R.
Machine-tool lubrication (A) 592

KEENAN, J. H.
Measurement of recovery factors and friction coefficients for supersonic flow of air in a tube (A) 156

KEHL, ROBERT JOSEPH
Obituary 352

KELLOGG, MORRIS WOODRUFF
Obituary 440

KELLY, HARRY JOSEPH
Obituary 352

KEMLER, E. N.
Some kinematic aspects of pumping-unit mechanisms (A) 37

KENNARD, E. H.
New approach to shell theory: circular cylinders (A) 922

KERR, S. LOGAN
Hydraulic transients (BR) 81

KERRICK, JOSEPH HOMET
Obituary 184

KESSLER, GEORGE W.
Modern high-pressure high-temperature boilers
1. General design trends and considerations 797
2—Present trends and considerations in steam-temperature controls—reheat boilers 878

KESSLER, HENRY R.
Biography 689
Nominated for Regional Vice-President 689

KETCHUM, G. M.
Measurement of recovery factors and friction coefficients for supersonic flow of air in a tube (A) 156

KETTERING, E. W.
History and development of the 567 series General Motors locomotive engine (A) 159

KEYES, F. G.
Additional measurements of heat conductivity of nitrogen, carbon dioxide, and mixtures (A) 667

KIDD, GEORGE FREDERICK
Obituary 440

KIMBALL, DEXTER S.
Obituary 961

KIMBALL, EDWIN ELLIOT
Obituary 352

KINEMATICS
Some kinematic aspects of pumping-unit mechanisms (A) 37

KING, CHARLES BURTON
Obituary 352

KING, W. J.
Methods of measuring high temperatures in gas streams (A) 236
Pattern of gas-turbine development (D) 1032

KIPP, E. M.
Effect of variations in viscosity of lubricants upon Timken OK and psi values (A) 40
Experiences with synthetic lubricants (D) 162

KIPPENHAN, CHARLES J.
Effect of high-frequency sound waves on an air-propane flame (A) 236

KIRBY, WILLIAM KENNETH
Obituary 102

KLINE, G. M.
Receives Honor Award of Washington chapter of American Institute of Chemists 330

KLINGENSMITH, K. K.
Measurement of recovery factors and friction coefficients for supersonic flow of air in a tube (A) 156

KLINTMAN, PEHR CHRISTIAN
Obituary 774

KNAPP, R. T.
Delivers annual James Clayton lecture before The Institution of Mechanical Engineers 330

KNERR, H. J.
Air freight handling operations (D) 839

KNOWLES, CARROLL
Obituary 184

KNOWLTON, HARRY ANDERSON
Obituary 354

KNOWLTON, P. H.
Comparative efficiencies of central station reheat and nonreheat steam turbine-generator units (A) 152

KOCH, PETER
Some technical aspects of trimming lumber in the planing mill (A) 407

KOHNEN, BERNARD WILLIAM
Obituary 102

KOLARIK, I. S.
Effect of variations in viscosity of lubricants upon Timken OK and psi values (A) 40

KOOISTRA, L. F.
High-temperature stress-rupture testing of tubular specimens (A) 32

KOUWENHOVEN, FRANK WOLFERT
Obituary 1054

KOWALCZYK, LEON S.
Thermodynamics or energodynamics (C) 516

KRAUT, RALPH J.
New production facilities; a brief survey of the machine-tool industry today 212

KREIDER, CHARLES M.
Economics of hardboard manufacture (A) 334

KREISLE, LEONARDT F.
Bolt elongations and loads (A) 38

KRETSCH, H. W.
Application of temperature control to turbojet engines (A) 923

KRIEG, EDWIN H.
Etiwanda—A study in over-all steam-station economy 543
Modern reheat turbines (D) 595
The reheat steam turbine (D) 597

KUHASZ, C. J.
New procedures in industrial thermal-insulation application (A) 1029

KUIVINEN, T. O.
Full-scale fatigue testing of compressor cylinders (A) 1029

KURKJIAN, ARMEN STAPAN
Obituary 1054


# L


LAIRD, W. M.
Investigation of the bit forces in rotary drilling and their measurement with a bottom-hole weight indicator (A) 1028

LAMBELET, CARL HENRY
Obituary 776

LANDBERG, ERIK GUSTAV
Obituary 272

LANDRY, B. A.
Combustion, flames, and explosions of gases (BR) 247

LANE, FRANK
Optimum single propellers in radially varying incompressible inflow (A) 508

LANEY, FRANK RAYMOND
Obituary 862

LANG, H. A.
Stresses in a pressure vessel with a flat-head closure (A) 238
Stresses in a pressure vessel with a hemispherical head (A) 757

LANGER, T. W.
Some industrial experiences with synthetic lubricants (AC) 164

LANGHAAR, H. L.
Torsion of curved beams of rectangular cross section (A) 35

LANGHAMMER, A. J.
Treatise on powder metallurgy. Vol. 3, classified and annotated bibliography (BR) 674

LANGTRY, W. D.
Methods of storing coal (D) 412

LANIER, HAMKELL DUBOSE
Obituary 184

LAPSLEY, J. T., JR.
Deformation work absorbed by the workpiece during metal cutting (A) 919

LARKIN, W. H.
Is there strength in unity? (A) 608

LARSON, F. R.
Time-temperature relationship for rupture and creep stresses (A) 32

LARSSON, KARL H.
Turbojet transports—the "Comet" (D) 243
Turbojet-aircraft—the Jetliner (D) 241

LATHAM, PAUL WALKER, JR.
Obituary 184

LEE, E. H.
Large plastic deformations of beams under transverse impact (A) 594
Plastic flow in a V-notched bar pulled in tension (A) 759
Theoretical analysis of metal-forming problems in plane strain (A) 157
Theory of plasticity applied to a problem of machining (A) 35

LEE, SHIH-YING
Contributions to hydraulic control
1—Steady-state axial forces on control-valve pistons (A) 38
2—Transient-flow forces and valve instability (A) 38

LEE, TI-CHIANG
On the stresses in a rotating disk of variable thickness (A) 507

LEE, WINSTON F. Z.
Free vibrations of constrained beams (A) 594

LENAU, HENRI BIERING
Obituary 538

LEONARD, B. H.
Design and development of high-pressure injection pumps for hydrogenation service (A) 36

LEONARD, CHARLES FRANCIS
Obituary 958

LESSELLS, J. M.
Elected Honorary Member of ASME 692

LETSCH, E. R.
Methods of measuring high temperatures in gas streams (A) 236

LEVINE, PHILIP
Biography 73
Flame propagation in cylindrical tubes 483
Receives Undergraduate Student Award 73

LEWIS, HERBERT BUMP
Obituary 958

LI, Y. T.
Direct-reading indicated power meter (A) 924

LIFE-SAVING EQUIPMENT
Radio-controlled lifeboat (A) 395

LING, CHIH-BING
On symmetrical strain in solids of revolution in spherical co-ordinates (A) 35
On the stresses in a notched strip (A) 507

LITHIUM
Less familiar metals of commercial importance 3

LIVERSIDGE, H. P.
Receives William Penn Award 343

LO, HSU
Nonlinear problem in the bending vibration of a rotating beam (A) 834

LOCOMOTIVES
Progress in railway mechanical engineering 1950–1951 285

LOCOMOTIVES—DIESEL
German Diesel locomotive (A) 822
History and development of the 567 series General Motors locomotive engine (A) 159

LOCOMOTIVES—DIESEL (*continued*)
Method of establishing and comparing tonnage ratings of Diesel locomotives (A) 590

LOCOMOTIVES—ELECTRIC
Ignitron locomotive (A) 328
Locomotive motor testing (A) 1021

LOCOMOTIVES—GAS TURBINE
British gas-turbine locomotive (A) 497

LONDON, A. L.
Convective heat-transfer and flow-friction behavior of small cylindrical tubes—circular and rectangular cross sections (A) 237
Free-piston engine development—present status and design aspects (A) 409
Heat-transfer and flow-friction characteristics of some compact heat-exchanger surfaces. Part 3—Design data for five surfaces (A) 236

LOOMIS, WAYLAND EVERETT
Obituary 958

LOUGHIN, P. R.
Operation and performance of modern reheat boilers (A) 152

LUBKER, ROBERT A.
Less familiar metals of commercial importance 3

LUBRICANTS
Bearings, lubricants, and lubrication; a digest of 1951 literature 885
Better lubricants (A) 580
Bibliography 889
Effect of variations in viscosity of lubricants upon Timken OK and psi values (A) 40
Experiences with synthetic lubricants (D) 162
Production of lithium hydroxy stearate greases first project of new research study 683
Rolling-mill lubricant (A) 149
Use of the spectrograph in analyzing Diesel-engine lubricating oil (A) 659, 1047

LUBRICATION
Aircraft gas-turbine bearing lubrication (D) 512
Bearings, lubricants, and lubrication; a digest of 1951 literature 885
Bibliography 889
Effects of solid inclusions in sleeve-bearing oil supply (A) 592, 963
Lubrication problems in design of heavy-duty engines (A) 829
Machine-tool lubrication (A) 592
Modern machine-tool lubrication practice 803
Oil flow in plain journal bearings (A) 40
Oil flow, key factor in sleeve-bearing performance (A) 41
On the solution of the Reynolds equation for slider-bearing lubrication (A) 41
II. The viscosity a function of the pressure (A) 504
III. Effect of transverse curvature (A) 921

LUKE, YUDELL L.
*Applied Statistics*, a new journal of the Royal Statistical Society (BR) 760

LUNDY, W. L.
Storage of coal (AC) 413

LYERLY, RAY L.
Design and performance of an extended-surface regenerator for a gas-turbine plant (A) 235

MACHINE-TOOL INDUSTRY (*continued*)
Machine-tool builders (A) 1020
New production facilities; a brief survey of the machine-tool industry today 212

MACHINE TOOLS
American Standard, Accuracy of Engine and Toolroom Lathes 856
American standard chucks and chuck jaws 615
Analysis of developments in automation (A) 666
High-speed surface-broaching machine (A) 592
Machine-tool lubrication (A) 592
Machine-tool production (A) 24
Modern machine-tool lubrication practice 803
Rotary cutting tool (A) 160
Tool engineering research foundation announced 1047

MACHINING. *See* METAL CUTTING

MACK, HARVEY F.
Awarded Kiwanis International Legion of Honor 260

MACKAY, SAM L.
Fork-truck operators (D) 1033

MCKEE, PAUL W.
Water-pollution by industry (D) 165

MCKEE, S. A.
Oil flow in plain journal bearings (A) 40

MCKELVY, FRANCIS GRAHAM
Obituary 704

MCKEW, MICHAEL JOSEPH
Obituary 354

MACKS, E. F.
Operating characteristics of cylindrical roller bearings at high speeds (A) 37

MCMAHON, J. B.
Process characteristics which affect automatic control (A) 591

MACQUIGG, CHARLES ELLISON
Obituary 622

MADDOCK, R. J.
Dynamic shear-modulus apparatus and production test results for a cast crankshaft alloy (A) 830

MAGAMP. *See* ELECTRICAL MACHINERY

MAGNETIC DRIVES. *See* PUMPS—CENTRIFUGAL

MAGNETISM
Electromagnetic pump (A) 826
Magnetic-particle clutch (A) 38

MAINTENANCE
Broom closets or the effect of maintenance upon design of steam power plants (A) 410

MAKI, CLIFFORD R.
Fork-truck operators (D) 1033

MALLORY, BURTON COWLES
Biography 1046
Broom closets or the effect of maintenance upon design of steam power plants (A) 410
Elected Fellow of ASME 1046
Thermal performance of turbines (D) 671

MANAGEMENT. *See also* EQUIPMENT REPLACEMENT, FATIGUE OF WORKERS, WAGES AND WAGE INCENTIVES
Engineering in management 781
How to increase productivity in small plants 384
How to make the best use of consulting engineers 215
Incentive management (BR) 167
Industrial-engineering forum by ASME-UCLA 265
Industrial Engineering Institute, fourth annual meeting 98
Rediscovering America 131
Role of the estimator in industry (A) 507
Stretching engineering skill with predetermined time standards (A) 755
Systems analysis for effective administration (BR) 517
West Coast industrial-engineering conference, 1952 344

MANGANESE
German manganese research (A) 752

MANIFOLDS
Research in exhaust manifolds (A) 239

MANPOWER
Conservation of manpower and materials 389
Engineering-manpower shortage; how schools and industry may alleviate the situation 857
Engineers must be utilized to the best advantage 609
Manpower in defense economy 437
Manpower-shortage transcripts available 264


# M


MCBRIEN, R. L.
Turbojet aircraft—the Jetliner (D) 242

MCCAFFREY, W. R.
What standardization means to the mechanical industries 633

MCCLINTOCK, FRANK A.
Design of heat exchangers for minimum irreversibility (A) 237
On the direction of fatigue cracks in polycrystalline ingot iron (A) 156

MCEACHRON, KARL B.
Receives Engineering Societies of New England award 610

MCGREW, JOHN ALEXANDER
Obituary 704

MACHINE-SHOP PRACTICE
High-speed surface-broaching machine 735

MACHINE-TOOL INDUSTRY
Importance of machine-tool industry as the basic foundation of national defense (A) 501

MANPOWER (*continued*)
Manpower utilization and national security; a statement by the Engineering Manpower Commission of Engineers Joint Council ... 892
Older engineers should be employed to relieve shortages (C) ... 166
Women's colleges and industry could help meet the manpower shortage (A) ... 947

MANSFIELD, JUDSON H.
Woodworking machinery; history of development from 1852–1952 ... 983

MANUFACTURING
Analysis of developments in automation ... 810

MARIN, JOSEPH
Deflection and stresses in beams subjected to bending and creep (A) ... 670
Determination of theoretical plastic stress-strain relations for variable combined stress ratios (A) ... 833

MARINE ENGINEERING
Auxiliary gas-turbine engine (D) ... 515
Design features of a 250-kw gas-turbine engine used as drive for shipboard emergency generator ... 197

MARKOVITS, J. A.
Design and development of high-pressure injection pumps for hydrogenation service (A) ... 36
Recent developments and results at the gas-synthesis demonstration plant, Louisiana, Mo. (A) ... 928

MART, LEON THOMAS
Biography ... 612
Cooling-tower characteristics as determined by the unit-volume coefficient (A) ... 756
Elected fellow of ASME ... 612

MARTIN, R. J.
Design factors for industrial heat-pump installations ... 280

MARTIN, W. L.
Low-temperature insulation for refinery service (A) ... 1026

MARTINUZZI, P. F.
Pattern of gas-turbine development (D) ... 1031

MATERIALS HANDLING. *See also* COAL HANDLING, INDUSTRIAL TRUCKS
Air freight handling at Kelly Air Force Base ... 119
Belt conveyers—Industry's bulk-handling giant (A) ... 155
British mechanical-handling exhibit (A) ... 431
Coal pipe line (A) ... 230
College-Industry Committee on Material Handling Education formed ... 952
Material-handling facilities at Walter C. Beckjord Station (A) ... 758
Material Handling Institute sponsors series of unique conferences ... 683
Materials Handling Conference, 1952 ... 98
Materials-handling factors affecting space utilization (A) ... 928
Ore pipe line (A) ... 230
Pressure drops in the pneumatic conveyance of solids (A) ... 508
Turnover conveyer belt (A) ... 231

MATERIALS TESTING. *See* METAL TESTING, *and specific materials*
Effect of variations in viscosity of lubricants upon Timken OK and psi values (A) ... 40
Materials-testing reactor (A) ... 494

MATHEMATICS
Hydraulic transients (BR) ... 81
On symmetrical strain in solids of revolution in spherical co-ordinates (A) ... 35
Several approximate analyses of the bending of a rectangular cantilever plate by uniform normal pressure (A) ... 34
Some kinematic aspects of pumping-unit mechanisms (A) ... 37

MAULDIN, EARLE
Obituary ... 622

MAURO, FRANCESCO
Obituary ... 538

MAXWELL, BRUCE
Effect of velocity on tensile impact properties of polymethyl methacrylate (A) ... 161

MAYNARD, HAROLD B.
Changing philosophies on wage incentives ... 277
To serve as president of CIOS ... 343

MECHANICS
Alternative formulation of the laws of mechanics (A) ... 156
Variational principle for the mesh-type analysis of a mechanical system (A) ... 156

MECHANISMS. *See also* CAMS

MELLANBY, ALEXANDER LAWSON
Obituary ... 776

MERCHANT, M. E.
Elected president of American Society of Lubrication Engineers ... 610

MERRIAM, HENRY PARKER
Obituary ... 538

MERSHON, RALPH DAVENPORT
Obituary ... 442

MESSAROS, F. C.
Operating spreader stokers at light loads ... 453, 1035

METAL CARBIDES
Cemented chrome carbides (A) ... 820

METAL COATINGS
Aluminum coating (A) ... 823
Ceramic coatings (A) ... 911
Coatings for molybdenum (A) ... 824

METAL CREEP
Correlation of creep properties by a diffusion analogy (A) ... 759
Rupture and creep characteristics of titanium-stabilized stainless steel at 1100 to 1300 F (A) ... 32

METAL CUTTING. *See also* AUTOMATIC CONTROL, MACHINE TOOLS
AOA carbide cutting tool subcommittee functions as data clearinghouse ... 346
Comparison of parameters for the machining of gray cast iron (A) ... 31
Cutting-tool jet lubrication (A) ... 148
Definitions, functions, types, and designations of cutting fluids (A) ... 507
Deformation work absorbed by the workpiece during metal cutting (A) ... 919
Electrolytic metal cutting (A) ... 232
Gouging electrode (A) ... 317
Machining and grinding (A) ... 499
Measuring the cooling properties of cutting fluids (A) ... 31
Mechanics of three-dimensional cutting operations (A) ... 160
New developments in cutting metal (A) ... 754
New metal-cutting process makes use of new chemical compound, Metalloid X-20 (A) ... 316
Relative abrasiveness of the cast surfaces of various gray-iron castings on single-point tools of high-speed steel (A) ... 593
Report of an investigation of the strain-hardening effect upon subsequent levels due to metal cutting (A) ... 592
Shear-angle relationship in metal cutting (A) ... 666
Significance of the thermal number in metal machining (A) ... 754
Some observations on chip curl in the metal-cutting process under orthogonal cutting conditions (A) ... 919
Theory of plasticity applied to a problem of machining (A) ... 35
Thermophysical aspects of metal cutting (A) ... 31
Tool forces and tool-chip adhesion in the machining of nodular cast iron (A) ... 31
Trepanning—the machining of accurate bores in metal (A) ... 394

METAL EXTRUSION
Plastic flow in a lead extrusion (A) ... 920
Tube-extrusion process (A) ... 748

METAL FATIGUE
On the direction of fatigue cracks in polycrystalline ingot iron (A) ... 156
Shotpeening of gears (D) ... 79

METAL FORMING
Experiments on the plastic compression of a block between rough plates (A) ... 833
Hydraulic press and drawbench (A) ... 818
Stretch-flattening machine (A) ... 663
Theoretical analysis of metal-forming problems in plane strain (A) ... 157

METAL ROLLING. *See* LUBRICANTS

METAL SCRAP
Scrap (Ed) ... 106
Scrap needed (A) ... 321

METAL TESTING
Comparisons at elevated temperatures of some commercial grades of ferritic cast steels (A) ... 670
Time-temperature relationship for rupture and creep stresses (A) ... 32

METAL TESTING—FATIGUE
Endurance limit test (A) ... 25
Full-scale fatigue testing of compressor cylinders (A) ... 1029

METAL TESTING—TENSION
High-temperature stress-rupture testing of tubular specimens (A) ... 32

METALLOGRAPHY
Recent experience in examination of high-temperature catalytic-cracking pressure equipment (A) ... 36

METALLURGY
Chemical metals refining (A) ... 586

METALLURGY (*continued*)
Report of an investigation of the strain-hardening effect upon subsequent levels due to metal cutting (A) ... 592

METALS. *See also* NONFERROUS METALS, RARE EARTHS, TITANIUM
Effect of slightly elevated-temperature treatment upon microscopic and submicroscopic residual stresses induced by small inelastic strains in metals (A) ... 589
Extrusion of plastics, rubber, and metals (BR) ... 600
Investigation of electromagnetic flowmeters (A) ... 33
Less familiar metals of commercial importance ... 3
Symposium on "Properties of Metallic Surfaces" ... 855

METEOROLOGY
Weather research—rain making (A) ... 663

MEXICO
New University Center being constructed in Mexico City ... 769

MEYER, C. A.
Instrumentation for axial-flow-compressor research (A) ... 591

MICKEVICZ, E. J.
Techniques and equipment for the generation of dynamic high pressures (A) ... 835

MICROSCOPES. *See* INSTRUMENTS—OPTICAL

MIDWEST POWER CONFERENCE
Renamed American Power Conference ... 173

MILLARD, L. O.
Belt conveyers—Industry's bulk-handling giant (A) ... 155

MILLER, ALBERT R.
Fuel and engineering consulting service for small plants (A) ... 40

MILLER, C. L.
Honored by American Society of Lubrication Engineers ... 530

MILLER, CARL E.
Preventing air pollution from coal fired steam generators (A) ... 756

MILLER, EARLE C.
Practical suggestion on low-load operation of spreader stokers ... 460, 1035

MILLER, EDWARD GODFREY
Obituary ... 958

MILLER, JAMES
Time-temperature relationship for rupture and creep stresses (A) ... 32

MILLER, SYDNEY E.
Electrical ignition of high-compression engines (A) ... 830

MILLING
Vibrations in knee-type horizontal milling machines (A) ... 919

MINERALS AND METALS ADVISORY BOARD
Organized under National Academy of Sciences, National Research Council ... 266

MINING. *See also* COAL MINING
Bulk mining (A) ... 586
U.S. mineral production (A) ... 221

MIZE, GEORGE GILBERT
Obituary ... 184

MOELLER, WILLIAM
Obituary ... 538

MOLDING. *See* FOUNDRY PRACTICE

MOLYBDENUM
Less familiar metals of commercial importance ... 3

MONDAY, BETTY
Faith of an engineer's wife (C) ... 337

MOODY, LEWIS F.
Biography ... 69
Honorary member of ASME ... 69

MORGAN, DAVID W. R.
Biography ... 690
Nominated for director at large ... 690

MORRIS, E. B.
Field testing of steam sampling nozzles as applied to evaporator vapor (A) ... 331

MORRISON, RICHARD B.
Study of detonative phenomena in gaseous mixtures by the use of shock-tube techniques (A) ... 505

MORTIMER, JAMES DANIEL
Obituary ... 622

MOSELEY, ALEXANDER WILLETT
Obituary ... 538

MOSSHART, D. J.
How to achieve smokeless operation of spreader stokers ... 462

MOTOR VEHICLES
Air freight handling operations (D) ..... 837
Plastic sports-car body (A) ..... 498
The Transit Van System of transportation ..... 377
Use of honeycomb panel construction in military lightweight trailers (A) ..... 406

MOYER, MALCOLM B.
Oil specifications for commercial burners (D) ..... 929

MULLER, WILLIAM R.
Receives Gilbreth Medal ..... 1044

MULLENDORE, W. C.
The retreat from freedom ..... 135

MULLIGAN, J. C.
Comparative performance of coals of different rank in a film-cooled gas-turbine generator (A) ..... 503

MUMFORD, A. R.
An investigation of the variation in heat absorption in a natural-gas-fired, water-cooled steam-boiler furnace (A) ..... 233

MURAD, LILLIAN
Elected president of Society of Women Engineers ..... 849

MURPHY, EDWARD THOMAS
Obituary ..... 354

MURPHY, J. J.
Recent experience in examination of high-temperature catalytic-cracking pressure equipment (A) ..... 36

MURPHY, W. A.
Effect of impact on freight-operation loss and damage (A) ..... 504

MURRAY, THOMAS E.
Receives Lactare Medal ..... 421
Receives Yale Eng'g. Ass'n. Award for Meritorious Service ..... 525

MYCOFF, R. A.
Special features at Milesburg Power Station (A) ..... 758

MYKLESTAD, N. O.
Concept of complex damping (A) ..... 593
Numerical analysis of forced vibrations of beams (A) ..... 923


# N


NAGHDI, P. M.
Bending of elastoplastic circular plates with large deflection (A) ..... 508

NAGLER, FORREST
Awarded life membership ..... 343
Obituary ..... 538

NASH, W. A.
Several approximate analyses of the bending of a rectangular cantilever plate by uniform normal pressure (A) ..... 34

NATURAL GAS. *See* GASES
Conditioning of natural gas ..... 563
Design and construction of Pacific Gas and Electric Company's 34-in. gas line (A) ..... 505
Economics of natural gas and liquefied petroleum gases ..... 467
Research aimed at manufacture of natural-gas substitutes ..... 1041

NATURAL-GAS PIPE LINES
The gas-turbine's contribution to gas-pipe-line pumping (A) ..... 234

NATURAL-GASOLINE INDUSTRY. *See* GASOLINE

NEELY, FRANK HENRY
Biography ..... 612
Elected Fellow of ASME ..... 612
Receives Gantt Medal ..... 610

NEILSON, J. E.
Operation of spreader stokers (D) ..... 1034

NEMETH, Z. N.
Operating characteristics of cylindrical roller bearings at high speeds (A) ..... 37

NEUBERGER, EDMOND FREDERICK
Obituary ..... 102

NEW, J. C.
Nondestructive differential-pressure test for thin shells (A) ..... 922

NEWCOMB, W. K.
Combustion fundamentals of heavy-duty gas engines (A) ..... 830

NEWHALL, D. H.
High-pressure wire gage using gold-chrome wire (A) ..... 834
Piston gage as a precise pressure measuring instrument (A) ..... 835

NEWTON, H. T.
Discharge measurements by means of cylindrical nozzles (A) ..... 158

NEWTON, R. G.
Progressive-wave approach to the theory of blast shock (A) ..... 508

NICHOLS, J. B.
Energy basis for comparison of performance of combustion chambers (A) ..... 669

NICKEL
Nickel-conservation research (A) ..... 586
Nickel industry (A) ..... 222
Nickel tensile properties (A) ..... 825

NICOL, GEORGE ALEXANDER, JR.
Obituary ..... 442

NICOSON, F. E.
Selecting and training personnel for centralized control power station (A) ..... 665

NOMOGRAMS. *See* GRAPHICAL METHODS

NONDESTRUCTIVE TESTING
Betatron inspection of armor-steel castings (A) ..... 660
Isotopic steel inspection (A) ..... 319
Various methods of high-pressure-testing oil-country tubular material (A) ..... 1028

NONFERROUS METALS
Less familiar metals of commercial importance ..... 3

NORDEN, HENRY FREDERIC
Obituary ..... 958

NORDHOFF, W. A.
Role of the estimator in industry (A) ..... 507

NORRIS, ALFRED GEORGE
Obituary ..... 958

NOZZLES
Discharge measurements by means of cylindrical nozzles (A) ..... 158
Field testing of steam sampling nozzles as applied to evaporator vapor (A) ..... 331

NUCLEAR ENERGY
Atomic-energy declassification (A) ..... 575
Institute of Nuclear Studies ..... 683
Low-intensity test reactor (A) ..... 576
Low-power nuclear reactor (A) ..... 660
Nuclear-power production (A) ..... 575

NUTTALL, HENRY
Torsion of uniform rods with particular reference to rods of triangular cross sections (A) ..... 508

NYDEGGER, PAUL FREDERICK
Obituary ..... 958

NYE, J. F.
Experiments on the plastic compression of a block between rough plates (A) ..... 833


# O


OBERG, ERIC
Obituary ..... 102

OEDERLIN, FREDERICK
Engineering achievements in Switzerland and their background (correction) ..... 246

O'HAGAN, JAMES EDGAR
Obituary ..... 538

OIL FUEL
Commercial burner oil specifications ..... 475
Diesel fuel performance (A) ..... 332
Oil specifications for commercial burners (D) ..... 929

OIL SHALE. *See* SHALE-OIL INDUSTRY

OKUBO, H.
Approximate approach for torsion problem of a shaft with a circumferential notch (A) ..... 34

OLDACRE, WILLIAM HENRY
Obituary ..... 263, 354

OLIPHINT, JOSEPH B.
Bolt elongations and loads (A) ..... 38
Torsion of a circular shaft with diametrically opposite flat sides (A) ..... 507

OLSEN, N. T.
Developments in metallic friction draft gears (A) ..... 590

ONO, GEORGE Y.
Pressure angles in cam roller followers (A) ..... 667

OPERATIONS RESEARCH SOCIETY
Formed in May, 1952 ..... 950

OPPENHEIM, A. K.
Contribution to the theory of the development and stability of detonation in gases (A) ..... 156
Free-piston engine development—present status and design aspects (A) ..... 409
Let's take the strait jacket off technical style (D) ..... 930

OPTICS. *See* INSTRUMENTS—OPTICAL

ORDNANCE. *See also* GUIDED MISSILES
280-mm gun capable of firing an atomic projectile (A) ..... 1018

ORIFICES. *See* FLUID METERS

ORMONDROYD, JESSE
Josiah Willard Gibbs: The history of a great mind (BR) ..... 247

ORTMAN, OSCAR ADOLF HADAR
Obituary ..... 1054

OSBORNE, LATHAM EDGAR
Biography ..... 70
Honorary Member of ASME ..... 70

OSCILLATIONS. *See* VIBRATION

OWENS, W. D.
Frequency-response analysis for industrial automatic control systems (A) ..... 159


# P


PACKAGING
Foamed phenolic resin (A) ..... 576

PAGE, SCHUYLER COLFAX
Obituary ..... 1054

PAN-AMERICAN FEDERATION OF ENGINEERING SOCIETIES. *See* UPADI

PANELS. *See* STRUCTURES

PAO, YOH-HAN
Deflection and stresses in beams subjected to bending and creep (A) ..... 670

PARMAKIAN, JOHN
Measurement of hydraulic-turbine vibration (A) ..... 158

PARSONS, J. L.
Experiences with synthetic lubricants (D) ..... 163

PARTICLES. *See* HYDRODYNAMICS

PATENTS
U. S. Patent Office 2,999,999th patent expires ..... 606

PATERSON, ALBERT BARNETT
Obituary ..... 1054

PATTISON, D. M.
Choosing new machinery and equipment ..... 716
Economics and philosophy of choosing new machinery and equipment (A) ..... 666

PAXTON, ROBERT
Life trustee of Rensselaer Polytechnic Institute ..... 263

PAYNE, EARL C.
Biography ..... 612
Elected Fellow of ASME ..... 612

PEARSON, HARRY R
Biography ..... 690
Nominated for Regional Vice-President ..... 690

PELLETTERE, JOSEPH ANTON
Obituary ..... 354

PENDRAY, G. EDWARD
Exploration of space (BR) ..... 1035

PERRY, HARRY
Thermodynamics of gasification of coal with oxygen and steam (A) ..... 39

PERRY, THOMAS D.
Plywood is engineered wood ..... 787

PERSONNEL WORK. *See also* FATIGUE OF WORKERS, INDUSTRIAL TRAINING
Psychological techniques in American industry (A) ..... 1041
Readings in personnel administration (BR) ..... 600

PETERSEN, H. J.
Developments in Francis turbines (D) ..... 511

PETERSON, R. R.
Design features of a 250-kw gas-turbine engine (AC) ..... 515
Design features of a 250-kw gas-turbine engine used as drive for shipboard emergency generator ..... 197

PETROLEUM INDUSTRY. *See also* GASOLINE, NATURAL GAS
Gas injection for increased oil recovery (A) ..... 918
Impact of defense activities on petroleum fuel supplies (A) ..... 333
Oil industry survey (A) ..... 753
Petroleum industry survey (A) ..... 224

PETROLEUM PIPE LINES
Crude-oil working tanks: design, construction, operation, and maintenance considerations (A) ..... 1024
Pipe-line scraper development (A) ..... 1025
Remote-control electric-valve operation for crude and products lines (A) ..... 1030
Some practical considerations regarding pipe-line control-valve design (A) ..... 1026
Technical and commercial factors relating to Trans Mountain oil pipe line (A) ..... 410

PETROLEUM REFINING
Infrared carbon-monoxide gas analyzer—a tool for afterburning prevention (A) 756
Low-temperature insulation for refinery service (A) 1026
Mechanical features of the cycloversion process (A) 1024
Orthoflow fluid catalytic-cracking units—their design and operation (A) 1029
Recent experience in examination of high-temperature catalytic-cracking pressure equipment (A) 36

PETROLEUM-WELL EQUIPMENT. *See also* PIPE AND PIPING
American oil-well cementing practice (A) 1027
Investigation of the bit forces in rotary drilling and their measurement with a bottom-hole weight indicator (A) 1028
Recent developments in drill bits and drilling methods (A) 1028
Rotary drilling (A) 661
Sucker-rod pump mechanical aspects (A) 1026

PFLAGER, HARRY MILLER
Obituary 442

PHELPS, CHARLES CRAIG
Obituary 862

PHILLIPS, ARIS
Bending with axial force of curved bars in plasticity (A) 759

PHILLIPS, ELLIS L.
Biography 612
Elected Fellow of ASME 612

PHILLIPS, E. M.
Lubrication-bearing problems in aircraft gas turbines (AC) 514

PHOTOELASTICITY
Photoelastic stress analysis (A) 151
Plastic deformation (A) 581

PHOTOELECTRICITY. *See* INSPECTION, INSTRUMENTS—PHOTOELECTRIC

PHOTOGRAPHY. *See also* TELEVISION
Photographic analysis of sprays (A) 39
Rapid camera shutter (A) 323

PIERCE, FREDERIC EMERY
Obituary 1054

PIGOTT, R. J. S.
New developments in cutting metal (A) 754

PINKUS, OSCAR
Pressure drops in the pneumatic conveyance of solids (A) 508

PIPE AND PIPING
ASTM Specifications for Steel Piping Materials 950
Code for Pressure Piping; interpretations 349, 698
Code for Pressure Piping being revised 1049
Gas industry formulating safety code for gas piping 856
Plastic pipe (A) 322
Plastic-pipe research (A) 1020
Various methods of high-pressure-testing oil-country tubular material (A) 1028

PIPE FITTINGS
American standard, malleable-iron screwed fittings 433

PIPE LINES. *See also* MATERIALS HANDLING, NATURAL-GAS PIPE LINES, PETROLEUM PIPE LINES
Bending vibrations of a pipe line containing flowing fluid (A) 593
Pipe-line network analyzer (A) 588

PIRSH, E. A.
Influence of boiler design and operating conditions on steam contamination (A) 331
Spectrophotometric determination of small amounts of soluble silica in water (A) 331

PISTONS. *See* VALVES

PLAGWIT, ERIC
Obituary 622

PLASTICITY. *See also* STRESSES AND STRAINS
Bending with axial force of curved bars in plasticity (A) 759
Determination of principal plastic strains (A) 161
Experiments on the plastic compression of a block between rough plates (A) 833
Plastic flow in a V-notched bar pulled in tension (A) 759
Plastic-rigid analysis of long beams under transverse impact loading (A) 834
Safety factor of an elastic-plastic body in plane strain (A) 35
Theory of plastic bending from a statistical aspect (A) 834
Theory of plasticity applied to a problem of machining (A) 35

PLASTICS. *See also* PIPE AND PIPING
Bibliography 309
Effect of preloading and fatigue on mechanical properties of glass-cloth plastic laminates (A) 920

PLASTICS (*continued*)
Effect of velocity on tensile impact properties of polymethyl methacrylate (A) 161
Extrusion of plastics, rubber, and metals (BR) 600
Fluorocarbon-type plastics (A) 746
High-temperature resin (A) 227
Mechanical properties of glass-cloth plastic laminates as related to direction of stress and construction of laminate (A) 920
Plastic pipe (A) 322
Plastic sports-car body (A) 498
Plastics molding (BR) 518
Plastics raw-material-supply situation (A) 227
Reinforced plastics (A) 376

PLATES
Bending and buckling of an elastically restrained circular plate (A) 509
Bending of a cylindrically aeolotropic circular plate with eccentric load (A) 34
Bending of a uniformly loaded rectangular plate with two adjacent edges clamped and the others either simply supported or free (A) 509
Bending of elastoplastic circular plates with large deflection (A) 508
Bending of uniformly loaded sectorial plates with clamped edges (A) 33
Dynamic buckling of thin elastic plates (A) 405
Effect of a rigid circular inclusion on the bending of a thick elastic plate (A) 34
Large deflection theory for orthotropic rectangular plates subjected to edge compression (A) 833
Large deflections of circular plates (A) 509
Linear bending theory of isotropic sandwich plates by an order of magnitude analysis (A) 33
Marcus method applied to solution of uniformly loaded and clamped rectangular plate subjected to forces in its plane (A) 509
Plane-stress problem of perforated plates (A) 834
Several approximate analyses of the bending of a rectangular cantilever plate by uniform normal pressure (A) 34

PLEASANTS, J. G.
Engineering in management 781

PLUMMER, FRED L.
Elected president of American Welding Society 1044

PLYWOOD
Hardboard-faced fir plywood: production and specifications (A) 407
Plywood is engineered wood 787

PNEUMATIC CONVEYING. *See* MATERIALS HANDLING

POLLIS, S. R.
Flow through two orifices in series (A) 158

POOR, H. H.
Operation and performance of modern reheat boilers (A) 152

POPE, JOSEPH
Biography 1046
Elected Fellow of ASME 1046

PORTER, DAVID BURR
Biography 1046
Elected Fellow of ASME 1046

PORTER, F. P.
Torsional vibration notes with solutions for an untuned viscous damper and a flexible coupling with nonlinear elasticity (A) 832

POTTBERG, ROLFE
Problems in storing and handling pulverized materials (D) 245

POTTER, J. H.
Flame velocities in carbon monoxide-oxygen mixtures (A) 755
Joule-Thomson coefficients for air at one atmosphere (A) 504

POWDER METALLURGY
Treatise on powder metallurgy. Vol. 3, classified and annotated bibliography (BR) 674

POWELL, E. M.
Progress report of reheat boiler operation and design (A) 153

POWER. *See also* ATOMIC ENERGY
Electric power load expected to double during next three years (A) 211
The Italian power industry 721
Power show covers applications in every industry 936
The romance of power and fuels 812
Survey of power production (A) 220
Vision in power 465

POWER PLANTS. *See also* INDUSTRIAL TRAINING
Development and implementation of a generation program on the American Gas and Electric Company System III—200,000 kw, 2000 psi, 1050 F-1050 F—An advance in the economics of integrated power system generation (A) 240
Power-plant engineering objectives reflected in plans for power show 847

POWER PLANTS—BINARY-VAPOR
Mercury-steam power plants (D) 166

POWER PLANTS—DIESEL
Diesel power plants versus steam power plants (A) 831

POWER PLANTS—GAS-ENGINE
Application of internal-combustion generating units in the rural electrification program (A) 831
Mobile gas-turbine plant (A) 147

POWER PLANTS—HYDROELECTRIC
Canadian hydro development (A) 653
Hydro power diminishing (A) 917

POWER PLANTS—INDUSTRIAL
Fuel and engineering consulting service for small plants (A) 39, 40
Steel-works power plants (A) 924

POWER PLANTS—STEAM. *See also* POWER PLANTS—INDUSTRIAL
Boiler controls for multiple fuel firing in modern steam-generator installations (A) 925
Broom closets or the effect of maintenance upon design of steam power plants (A) 410
Comparative efficiencies of central station reheat and nonreheat steam turbine-generator units (A) 152
Design for extreme flood conditions at the Paddy's Run Station (A) 758
Design, installation, application of fuel-burning equipment for 25 to 300 hp range, to prevent air pollution (A) 506
Diesel power plants versus steam power plants 831
Etiwanda—A study in over-all steam-station economy 543
First year's operation of the Dunkirk Steam Station (A) 153
Harnessing natural steam in New Zealand (A) 917
Influence of low-quality coal on design and operation of pulverized-coal-fired units (A) 925
Material-handling facilities at Walter C. Beckjord Station (A) 758
New features of steam plants on inland rivers 723
Operating experiences with cyclone-fired steam generators 359 (D), 930
Operating experiences with 1250 gpm demineralizer water-treatment plant (A) 925
Operating experience with reheat at Edgar Station (A) 154
Outdoor power station in South Texas (A) 924
Reheat experiences at Port Washington (A) 153
Special features at Milesburg Power Station (A) 758
Twenty-five years of reheat operating experience on the A.G.&E. system (A) 154

POWER PRESSES
Direct-acting hydropress (A) 658
Heavy press program (A) 145, 912
Hydraulic press and drawbench (A) 818

POWER SYSTEMS
Application of internal-combustion generating units in the rural electrification program 831
Development and implementation of a generation program on the American Gas and Electric Company System.
I—System fundamentals (A) 240
II—Fuel supply (A) 240
III—200,000 kw, 2000 psi, 1050 F-1050 F—An advance in the economics of integrated power system generation (A) 240

PRAGER, W.
Safety factor of an elastic-plastic body in plane strain (A) 35

PRESCOTT, G. R.
Rupture-disk design evaluation and bursting tests (A) 1030

PRESSES. *See* POWER PRESSES

PRESSURE. *See* HIGH-PRESSURE RESEARCH, INSTRUMENTS—PRESSURE

PRESSURE DROP. *See* FLOW OF FLUIDS

PRESSURE VESSELS
API-ASME code for unfired pressure vessels for petroleum liquids and gases, fifth edition, 1951, recently published 533
Distribution of mechanical and thermal stresses in multilayer cylinders (A) 505
Gaskets for high pressure vessels (A) 836, 969
New-type code chart for the design of vessels under external pressure (A) 238
Procedure for determining the allowable out-of-roundness for vessels under external pressure (A) 238
Stresses in a pressure vessel with a flat-head closure (A) 238
Stresses in a pressure vessel with a hemispherical head (A) 757

PRICE, T. W.
Flame velocities in carbon monoxide-oxygen mixtures (A) 755

PRICES AND PRICE CONTROL
Price controls in mobilization (BR) 651

PRINCE, DAVID C., JR.
Performance of a cascade designed for prescribed loading (A) 757

PRINGLE, O. A.
Use of the centrifugal governor mechanism as a torsional vibration absorber (A) 667

PROPELLERS
Optimum single propellers in radially varying incompressible inflow (A) 508

PUBLIC RELATIONS
Public relations and engineers 740

PUGH, JOHN J.
Design and construction of Pacific Gas and Electric Company's 34-in. gas line (A) 505

PULSATIONS. *See* COMPRESSORS, VIBRATION

PULVERIZED COAL
Influence of low-quality coal on design and operation of pulverized-coal-fired units (A) 925

PULVERIZED MATERIALS
Problems in storing and handling pulverized materials (D) 245

PUMP TESTING
Centrifugal-pump test stand (A) 396

PUMPS. *See also* PETROLEUM-WELL EQUIPMENT
Design and application of controlled-volume pumps for high pressure in the range of 10,000 to 30,000 psi (A) 835
Electromagnetic pump (A) 826
Some kinematic aspects of pumping-unit mechanisms (A) 37

PUMPS—CENTRIFUGAL
Magnetic-drive pump (A) 655

PUMPS—INJECTION
Design and development of high-pressure injection pumps for hydrogenation service (A) 36

PUMPS—PROPORTIONING
How to obtain instrument accuracy with proportioning pumps (A) 159

PURCELL, DANIEL N.
Operating experiences with 1250 gpm demineralizer water-treatment plant (A) 925

PUTNAM, A. A.
Study of burner oscillations of the organ-pipe type (A) 593

PUTZ, T. J.
The gas-turbine's contribution to gas-pipe-line pumping (A) 234

PYE, DAVID WALTER
Obituary 102


# Q


QUICK, RAY S.
Biography 613
Elected Fellow of ASME 613


# R


RADIO
Lunar reflection (A) 501

RADIOACTIVITY. *See also* INSTRUMENTS—RADIATION-DETECTING, NONDESTRUCTIVE TESTING
Radiation laboratory (A) 402
Radioactive fission products (A) 19
Remote-control microscope (A) 28

RADIOGRAPHIC INSPECTION. *See* NONDESTRUCTIVE TESTING

RAEHRS, E. C.
High-speed surface-broaching machine (A) 592, 735

RAHM, FENTON DOWLING
Obituary 354

RAILROAD CARS
Developments in cushioned underframes (A) 757
Dynamic testing of freight cars (A) 590
Economic study of roller bearings on freight cars (A) 159
Progress in railway mechanical engineering 1950–1951 285

RAILROAD MECHANICAL ENGINEERING
Progress in railway mechanical engineering 1950–1951 285
Railway mechanical engineering, 1950–1951 (correction) 840

RAILROAD TRAINS
Developments in cushioned underframes (A) 757
Developments in metallic friction draft gears (A) 590
Developments in rubber draft gears (A) 757
Operating experience of the Talgo train 375

RAILROADS. *See also* TRANSPORTATION
Effect of impact on freight-operation loss and damage (A) 504
Highway trailer rail service (A) 35
Highway trailers on railroad flatcars from the traffic viewpoint (A) 36

RAIN-MAKING. *See* METEOROLOGY

RARE EARTHS
Considered for new uses in industry (A) 745

RAUSHENBERGER, EVERETT J.
Application of internal-combustion generating units in the rural electrification program (A) 831

RAY, KELVIN J.
Design and application of waste-heat boilers 480

RAYNOR, F. G.
Influence of boiler design and operating conditions on steam contamination (A) 331

RED, DEONICY SAMUEL
Obituary 776

REED, HOMER C.
Engineering feature of the Union Oil shale retort (A) 1023

REED, JOHN C.
Obituary 776

REED, M. J.
Oil specifications for commercial burners (D) 929

REESE, H. R.
Modern reheat turbines (D) 595
Thermal performance of modern turbines 205, 672

REFRACTORIES
Fiberfrax refractory fiber (A) 824

REFRIGERATION
Design factors for industrial heat-pump installations 280
Refrigeration engineering conference 846

REGENERATORS. *See* GAS TURBINES

REHEAT. *See* BOILERS, COMPRESSORS, POWER PLANTS—STEAM, STEAM TURBINES

REISMANN, H.
Bending and buckling of an elastically restrained circular plate (A) 509

REISSNER, E.
Stresses and deformations of toroidal shells of elliptical cross section (A) 34

REMMERT, H. A.
Coal and coal-paste preparation and transfer problems for hydrogenation service (A) 927

RENOUF, RALPH R.
Sucker-rod pump mechanical aspects (A) 1026

REPORT WRITING
Let's take the strait jacket off technical style 649, 930

RESEARCH. *See also* HIGH-PRESSURE RESEARCH
Division of Co-operative Research, a link between the Engineering Center and industry, established at Columbia 952
Gas Institute reviews ten years of progress 173
Industrial research fellowships announced 265
National Science Foundation (A) 143
National Science Foundation issues tentative guide for prospective grantees 178
Scientific research (A) 393

RESEARCH (*continued*)
University of Washington research fellowships 432

RESEK, J. VERNE
Commercial burner oil specifications 475, 930

RESINS. *See* PLASTICS

RETORTS. *See* SHALE-OIL INDUSTRY

RETTALIATA, J. T.
Named president of Illinois Institute of Technology 263

REYNOLDS, ROBERT L.
Recent development of the reheat steam turbine 9, 597

RHEINGANS, WM. J.
Recent developments in Francis turbines 189, 512

RHENIUM
Less familiar metals of commercial importance 3

RICH, BEN R.
Investigation of heat transfer from an inclined flat plate in free convection (A) 921

RICH, R. R.
Data book for civil engineers (BR) 518

RITCHIE, JOHN D.
Hardboard-faced fir plywood: production and specifications (A) 407

RIVETED JOINTS
American standard small solid rivets 615

RIVOIRA, E. J.
High-speed surface-broaching machine (A) 592, 735

ROADS
New Jersey turnpike (A) 328

ROBERTS, D. L.
Technical and commercial factors relating to Trans Mountain oil pipe line (A) 410

ROBERTSON, J. D.
Comparative performance of coals of different rank in a film-cooled gas-turbine generator (A) 503

ROBINSON, ERNEST L.
Effect of temperature variation on the long-time rupture strength of steels (A) 32

ROBINSON, ROMNEY
Defense without inflation—or inflation without defense 312

ROBISON, H. E.
Adaptation of the spectrophotometric determination of small amounts of soluble silica in water to the determination of undissolved forms of silica (A) 332
Spectrophotometric determination of small amounts of soluble silica in water (A) 331

ROCKETS
*Bibliography of books and published reports on gas turbines, jet propulsion, and rocket power*, published by Bureau of Standards 266
Exploration of space (BR) 1035
Space travel (A) 816
V-2 rocket tests (A) 329

RODS
Torsion of uniform rods with particular reference to rods of triangular cross sections (A) 508

ROEHM, J. M.
Dynamic testing of freight cars (A) 590

ROGERS, FRANK HENKELS
Obituary 184

ROHRER, ALBERT LAWRENCE
Obituary 102

ROHSENOW, WARREN M.
Biography 73
Flow through two orifices in series (A) 158
Method of correlating heat-transfer data for surface boiling of liquids (A) 237
Receives Pi Tau Sigma Gold Award 73
Receives YEA award for the advancement of basic and applied science 525

ROLLER BEARINGS. *See* ANTIFRICTION BEARINGS

ROLLING MILLS. *See* LUBRICANTS

RONDO, ANTHONY ANDREW
Obituary 776

ROOS, H. WARREN
How to make the best use of consulting engineers 215

ROSA, ENCOLE, JR.
Readings in personnel administration (BR) 600

ROSE, EUGENE A.
Public relations and engineers 740

ROSE, GEORGE E.
Direct-fired heaters in natural-gasoline plants, their application, specification, and selection (A) 1025

ROSEN, C. G. A.
Guide posts to an engineering career 973

ROSENBERG, HEYMAN
Obituary 442

ROSENBLATT, MURRAY
Oil flow, key factor in sleeve bearing performance (A) 41

ROSENTHAL, F.
Elastic sphere under concentrated loads (A) 833

ROSENTHAL, LEO
Receives ARS Student Award 63

ROSSHEIM, D. B.
Recent experience in examination of high-temperature catalytic-cracking pressure equipment (A) 36

ROTE, F. B.
Comparison of parameters for the machining of gray cast iron (A) 31

ROTORS
On the stresses in a rotating disk of variable thickness (A) 507
Simple method of determining plastic stresses and strains in rotating disks with nonuniform metal properties (A) 833

ROUSH, C. W.
Properties of some heat-resistant adhesives 369

RUBBER
Cold-rubber production (A) 499
Extrusion of plastics, rubber, and metals (BR) 600
Rubber production (A) 227

RUDOLPH, FREDERIC CHARLES
Obituary 622

RUPTURE DISKS. *See* SAFETY ENGINEERING

RUSSIA
Russia's jet progress (A) 398

RYAN, E. F.
Railroads and highway trailers, economic aspects (A) 158

RYLANDER, H. GRADY
Effects of solid inclusions in sleeve-bearing oil supply (A) 5-92 963


# S


SADOWSKY, M. A.
On the axisymmetric problem of the theory of elasticity for an infinite region containing two spherical cavities (A) 34

SAFETY ENGINEERING
Industrial sight conservation (A) 392
Industry's last chance to prevent Government control in the field of industrial safety 202
International Conference of Directors of Safety in Mines Research 614
President's Conference on Industrial Safety, 1952, Washington, D.C. 682
Railroad-safety film (A) 581
Rupture-disk design evaluation and bursting tests (A) 1030
Safety convention attracts large audience 530

SAIBEL, EDWARD
Free vibrations of constrained beams (A) 594
On the solution of the Reynolds equation for slider-bearing lubrication (A) 41
II. The viscosity a function of the pressure (A) 504
III. Effect of transverse curvature (A) 921

ST. CLAIR, D. W.
Frequency-response analysis for industrial automatic control systems (A) 159

SALISBURY, J. KENNETH
Biography 73
Receives Pi Tau Sigma Richards Memorial Award 73

SAMPSON, H. R.
Highway trailers on railroad flatcars from the traffic viewpoint (A) 36

SAMS, J. H.
Mercury-steam power plants (D) 166

SANDAKER, J. H.
Recent developments and results at the gas-synthesis demonstration plant, Louisiana, Mo. (A) 928

SATHER, B. I.
Summary of investigation of two-stroke-cycle gas-generator aircraft engine (A) 239

SAUNDERS, BYRON W.
Project work for industrial-engineering students (A) 411

SAWDON, WILL MILLER
Obituary 538

SAWS
Comparative costs and operation of carbide-tipped saws (A) 155
Elements of circular saw design (A) 155

SAWYER, F. G.
Air pollution and the mechanical engineer (A) 160

SAWYER, R. TOM
Auxiliary gas-turbine engine (D) 515

SAXBY, LEWIS ELLIS
Obituary 354

SCHARTACH, CARL
Modern reheat turbines; service experience and recent design progress . . 107, 596

SCHAFER, SIDNEY PAUL
Obituary 272

SCHEIL, MERRILL A.
Embrittlement of 12 Cr steels after exposure to 750 and 900 F (A) 238

SCHELL, ERWIN H.
Moral and spiritual concepts in war production 2 128

SCHIERLAND, R. F.
Material-handling facilities at Walter C. Beckjord Station (A) 758

SCHMID, BEN JACOB
Obituary 1054

SCHOENFELD, CHARLES W.
American oil-well cementing practice (A) 1027

SCHROEDER, H. C.
Station design with cyclone-fired steam generators (A) 332

SCHROEDER, WILLIAM
Pressures required for thin press forgings (A) 405

SCHUMICHT, F. R.
Summary of investigation of two-stroke-cycle gas-generator aircraft engine (A) 239

SCHWEITZER, P. H.
Research in exhaust manifolds (A) 239

SCIENCE
National Science Foundation to award fellowships 97

SCIENTIFIC PUBLICATIONS
*Applied Statistics*, a new journal of the Royal Statistical Society (BR) 760
*Journal of Mechanics and Physics of Solids*, first number to be issued in October, 1952 856

SCOTT, HENRY FRANCIS
Obituary 776

SCRANTON, C. H.
Receives Cyrus Hall McCormick Gold Medal 610

SCRAP. *See* METAL SCRAP

SCREW THREADS
American Standard, Stub Acme Screw Threads 856
1950 Supplement to handbook H28 (1944), Screw-Thread Standards for Federal Services 267
Standardization and unification of screw threads (A) 1049

SCREWS
Standard for Machine Screws; proposed revision 1049

SEAPLANES
Future flying boats (A) 495

SEARS, W. R.
On asymmetric flow in an axial-flow compressor stage (A) 923

SEBAN, R. A.
Local heat-transfer coefficients on the surface of an elliptical cylinder in a high-speed air stream (A) 668

SEED, KENNETH W.
Mechanical features of the cycloversion process (A) 1024

SEIBERT, CHARLES JAY
Obituary 442

SELENIUM
Less familiar metals of commercial importance 3

SEN GUPTA, A. M.
Bending of a cylindrically aeolotropic circular plate with eccentric load (A) 34

SERRILL, J. L., JR.
Infrared carbon-monoxide gas analyzer—a tool for afterburning prevention (A) 756

SERVOMECHANISMS
Analysis of some hydraulic components used in regulators and servomechanisms (A) 159

SHAFFER, R. W.
Theory of elasticity applied to a problem of machining (A) 35

SHAFTS
Approximate approach for torsion problem of a shaft with a circumferential notch (A) 34
Critical whirling speeds of shaft-disk systems (A) 921
Hysteresis of shaft materials in torsion (A) 38
Torsion of a circular shaft with diametrically opposite flat sides (A) 507

SHALE—OIL INDUSTRY
Engineering features of the Union Oil shale retort (A) 1023
Mechanical design in oil-shale retorting plants (A) 1025
Off-site facilities of an oil-shale industry (A) 1027
Oil-shale tests (A) 226
Rotary drilling (A) 661
Synthetic-fuels research (A) 827

SHALLENBERGER, FRANK K.
How to increase productivity in small plants 384

SHAMBACH, H. L.
Turbojet aircraft—the Jetliner (D) 242

SHAW, M. C.
Mechanics of three-dimensional cutting operations (A) 160
Rotary cutting tool (A) 160
Shear-angle relationship in metal cutting (A) 666

SHELLS
New approach to shell theory: circular cylinders (A) 922
Nondestructive differential-pressure test for thin shells (A) 922
Stresses and deformations of toroidal shells of elliptical cross section (A) 34
Vibrations of elastic shells in a fluid medium and the associated radiation of sound (A) 509

SHEPERDSON, JOHN W.
Biography 849
Elected Fellow of ASME 859

SHEPPARD, RAYMOND
Modern reheat turbines; service experience and recent design progress . . 107, 596

SHIFLETT, W. P.
Wins Petroleum Division award 96

SHIPS. *See also* LIFE-SAVING EQUIPMENT

SHOCK. *See* EXPLOSIONS

SHOULBERG, R. H.
Measurement of recovery factors and friction coefficients for supersonic flow of air in a tube (A) 157

SHOUMATOFF, NICHOLAS
Hydrodynamic resistance of particles (A) 666

SHUMAN, E. C.
New procedures in industrial thermal-insulation application (A) 1029

SHURTER, ROBERT L.
Let's take the strait jacket off technical style 649

SIDEBOTTOM, O. M.
Axial tension and bending interaction curves for members loaded inelastically (A) 589
Influence of aging on the Bauschinger effect in inelastically strained beams (A) 589

SIDLER, PAUL R.
Operating experiences with stationary gas turbines 381
Pattern of gas-turbine development (D) 1032

SILICA. *See* BOILERS, FEEDWATER TREATMENT, WATER ANALYSIS

SILVER, FRANCIS
Storage and handling of pulverized materials (AC) 246

SIMPSON, ROBERT JAMES OSBORNE
Obituary 184

SKELLY, JOSEPH F.
Orthoflow fluid catalytic-cracking units—their design and operation (A) 1029

SKINNER, L. C.
Coal and coal-paste preparation and transfer problems for hydrogenation service (A) 927

SKINNER, WICKLIFFE, JR.
Economic aspects of natural-gasoline production on the lease (A) 1027

SMITH, CHARLES EWING
Obituary ... 272

SMITH, CLARENCE EUGENE
Obituary ... 354

SMITH, GEORGE HILLIER
Obituary ... 184

SMITH, P. A.
Mechanics of three-dimensional cutting operations (A) ... 160
Rotary cutting tool (A) ... 160

SMOKE
Design, installation, application of fuel-burning equipment for 25 to 500 hp range, to prevent air pollution (A) ... 506
How to achieve smokeless operation of spreader stokers ... 462
Low-load operation of spreader stokers (Panel discussion) ... 453
Preventing air pollution from coal fired steam generators (A) ... 756
Proper design, installation, and application of coal-burning equipment for boilers (25 500 hp) to prevent smoke and air pollution (A) ... 755

SOCIETY OF WOMEN ENGINEERS
National convention, 1952 ... 426

SOCIETY RECORDS OF THE ASME
Awards ... SR-49
Committee personnel index ... SR-55
Council ... SR-4
Depositories for ASME Transactions in the United States, Including Territories and Dependencies ... SR-79
Depositories for ASME Transactions in Other Countries ... SR-82
Honorary members ... SR-51
Living, Present, and Former Officers of the Society ... SR-52
Publications ... SR-83
Biographies ... SR-85
Books and pamphlets on special subjects ... SR-85
Index to *Mechanical Engineering* ... SR-87
Professional Divisions ... SR-11
Sections ... SR-22
Student Branches ... SR-82
Technical Committee publications ... SR-83
Woman's Auxiliary ... SR-48

SODIUM
Less familiar metals of commercial importance ... 3

SOLDER-JOINT FITTINGS
American Standard, Wrought-Copper and Wrought Bronze Solder-Joint Fittings ... 266

SOMES, A. D.
Development of process steam turbines for industry ... 299

SONNENSCHEIN, C. L.
Report of an investigation of the strain hardening effect upon subsequent levels due to metal cutting (A) ... 592

SOO, SHAO-LEE
Wet compression in an axial-flow compressor (A) ... 236

SORENSEN, H. A.
Burning sulphite waste liquor (A) ... 410

SOURBS, R. C.
Linear-resistance meters for liquid flow (A) ... 33

SPACE FLIGHT. *See* ROCKETS

SPARKES, HARRY P.
Appointed to Board of Examiners of American Institute of Electrical Engineers ... 849

SPARROW, STANWOOD WILLSTON
Obituary ... 1054

SPECTROGRAPHIC ANALYSIS
Use of the spectrograph in analyzing Diesel-engine lubrication oil (A) ... 659, 1047

SPEER, IVAN E.
Design considerations and development of a broad range, high-efficiency centrifugal compressor for a small gas-turbine compressor (A) ... 503

SPHERES
Elastic sphere under concentrated loads (A) ... 833

SPIELMAN, MAURICE
Local coefficients of mass transfer by evaporation of water into an air jet (A) ... 504

SPORN, PHILIP
Development and implementation of a generation program on the American and Electric Company System
I—System Fundamentals (A) ... 240
II—Fuel Supply (A) ... 240
III—200,000 kw, 2000 psi, 1050 F-1050 F—An advance in the economies of integrated power system generation (A) ... 240
Vision in power ... 465

SPRAYS
Photographic analysis of sprays (A) ... 39

SPRING, E. K.
Development of materials for wood-cutting tools (A) ... 926

SPRINGS
Design of flat-wound tension springs (A) ... 38
Mathematical analysis of the relaxation type of vehicle suspension (A) ... 594

STANDARDS. *See also* ASME STANDARDS WORKSHOP
ABC Conference held in Engineering Societies Building ... 699
Federal standardization (A) ... 315
Government purchasing practices commended; federal standards policy praised ... 605
ISO holds meeting at Columbia University ... 604
113 American standards approved by ASA ... 260
What standardization means to the mechanical industries ... 633

STANITZ, JOHN DANIEL
Biography ... 73
Receives Junior Award ... 73

STATISTICAL METHODS
*Applied Statistics*, a new journal of the Royal Statistical Society (BR) ... 760
Statistical distribution function of wide applicability (A) ... 156
Statistical techniques in time study (D) ... 336
Theory of plastic bending from a statistical aspect (A) ... 834

STEAM. *See also* POWER PLANTS—STEAM

STEAM CONDENSERS
Optimum design for surface condensers for steam-power plants (A) ... 924

STEAM PURITY
Influence of boiler design and operating conditions on steam contamination (A) ... 331

STEAM SUPERHEATERS
Behavior of superheater tubing materials in contact with combustion atmospheres at 1350 F (A) ... 32
Experimental superheater for steam at 2000 psi and 1250 F—Progress report of field operation (A) ... 154

STEAM TURBINES
Comparative efficiencies of central station reheat and nonreheat steam turbine-generator units (A) ... 152
Development of process steam turbines for industry ... 299
High-temperature turbine (A) ... 916
Modern reheat turbines; service experience and recent design progress ... 107, (D) 595
New method of calculation of reheat factors for turbines and compressors (A) ... 156
Recent development of the reheat steam turbine ... 9, (D) 597
Steam-turbine alloy (A) ... 918
Thermal performance of modern turbines ... 205, (D) 671

STEEL. *See also* INGOTS, IRON AND STEEL MANUFACTURE
Analyzing the hydrogen content in steel (A) ... 661
Comparisons at elevated temperatures of some commercial grades of ferritic cast steels (A) ... 670
Copper-clad steel plate (A) ... 1017
Steel-castings production (A) ... 24
Steel-castings publications ... 433

STEEL ALLOYS
ASTM Specifications for Steel Piping Materials ... 950
Embrittlement of 12 Cr steels after exposure to 750 and 900 F (A) ... 238
High-temperature properties of stainless steels ... 344
Isotopic steel inspection (A) ... 319
Rupture and creep characteristics of titanium-stabilized stainless steel at 1100 to 1300 F (A) ... 32

STEELE, M. C.
Partially plastic thick-walled cylinder theory (A) ... 35

STEIN, I. MELVILLE
Biography ... 613
Elected Fellow of ASME ... 613

STEINBUCH, M. L.
Comparisons at elevated temperatures of some commercial grades of ferritic cast steels (A) ... 670

STEINER, KALMAN
Oil specifications for commercial burners (D) ... 929

STEINKE, D. F.
Training of operating personnel for power plants with centralized control (A) ... 665

STEINMAN, D. B.
Honored by the Order of Chevaliers de la Croix de Lorraine et des Compagnons de la Résistance ... 949
Receives award given by National Society of Professional Engineers for distinguished service to the engineering profession ... 692
Receives Norman Medal ... 177

STERNBERG, E.
Elastic sphere under concentrated loads (A) ... 833
On the axisymmetric problem of the theory of elasticity for an infinite region containing two spherical cavities (A) ... 34

STEVENSON, WALTER NORMAN
Obituary ... 776

STICKLE, H. E.
Operating experience with reheat at Edgar Station (A) ... 154

STIFFES, M.
Large deflections of circular plates (A) ... 509

STIRLING, J. B.
Elected president of The Engineering Institute of Canada ... 530

STOKERS
How to achieve smokeless operation of spreader stokers ... 462
How to select spreader-stoker equipment ... 457
Light-load design features for spreader stokers ... 458
Low-load operation of spreader stokers (Panel discussion) ... 453
Operating spreader stokers at light loads ... 453, (D) 1034
Practical suggestion on low-load operation of spreader stokers ... 460, (D) 1034

STONE, C. S.
Design factors in the development of a small high-heat-release combustor (A) ... 669

STONE, V. L.
Operating experiences with cyclone-fired steam generators ... 359, 931

STONE, W. F.
Off-site facilities of an oil-shale industry (A) ... 1027

STONER, JAMES REID
Obituary ... 102

STORAGE
Problems in storing and handling pulverized materials ... 245

STRAIN GAGES
Conferences on SR-4 strain gages held in five western cities ... 950
Determination of principal plastic strains (A) ... 161
NBS symposium on resistance strain gages ... 258

STRAIN HARDENING. *See* METALLURGY

STRASSER, R. J.
Station design with cyclone-fired steam generators (A) ... 332

STRAUB, J. C.
Shotpeening as a factor in the design of gears (AC) ... 79

STRESSES AND STRAINS. *See also* CREEP OF MATERIALS, DEFORMATION, PLASTICITY, PRESSURE VESSELS, STRAIN GAGES
Approximate approach for torsion problem of a shaft with a circumferential notch (A) ... 34
Axial tension and bending interaction curves for members loaded inelastically (A) ... 589
Determination of theoretical plastic stress-strain relations for variable combined stress ratios (A) ... 833
Effect of a rigid circular inclusion on the bending of a thick elastic plate (A) ... 34
Effect of slightly elevated-temperature treatment upon microscopic and submicroscopic residual stresses induced by small inelastic strains in metals (A) ... 589
Effect of temperature variation on the long-time rupture strength of steels (A) ... 32
Influence of aging on the Bauschinger effect in inelastically strained beams (A) ... 589
Linear bending theory of isotropic sandwich plates by an order of magnitude analysis (A) ... 33
Method of obtaining shear stress-strain graphs by interpretation of moment-twist data (A) ... 922

STRESSES AND STRAINS (*continued*)
New approach to shell theory: circular cylinders (A) 922
On symmetrical strain in solids of revolution in spherical co-ordinates (A) 35
On the axisymmetric problem of the theory of elasticity for an infinite region containing two spherical cavities (A) 34
On the stresses in a notched strip (A) 507
Photoelastic stress analysis (A) 151
Plane-stress problem of perforated plates (A) 834
Simple method of determining plastic stresses and strains in rotating disks with nonuniform metal properties (A) 833
Stresses and deformations of toroidal shells of elliptical cross section (A) 34
Theoretical analysis of metal-forming problems in plane strain (A) 157
Thermal stresses in bodies exhibiting temperature-dependent elastic properties (A) 834

STRICKER, ADAM K.
Impact of defense activities on petroleum fuel supplies (A) 333

STRIKER, RAYMOND CHRISTIAN
Obituary 1054

STRUB, R. A.
Distribution of mechanical and thermal stresses in multilayer cylinders (A) 505

STRUCTURES
Analysis of fully restrained slabs under concentrated loads (A) 922
Axial tension and bending interaction curves for members loaded inelastically (A) 589
Effect of temperature variation on the long-time rupture strength of steels (A) 32
Limit design of a transversely loaded square grid (A) 670
Use of honeycomb panel construction in military lightweight trailers (A) 406

STUBBS, H. E.
Photographic analysis of sprays (A) 39

STUMPF, H.
Use of honeycomb panel construction in military lightweight trailers (A) 406

STUTSON, A. C.
Experiences with synthetic lubricants (D) 163

SUPERHEATERS. *See* STEAM SUPERHEATERS

SUPERSONIC FLOW
Heat transfer from spheres to a rarefied gas in supersonic flow (A) 160
Measurement of recovery factors and friction coefficients for supersonic flow of air in a tube (A) 156, 157
Supersonic flow with variable specific heat (A) 156

SURFACE FINISH
Standard on Surface Roughness and Lay; revision in progress 1049
Surface-finish standards (A) 315

SUSPENSIONS. *See* SPRINGS

SUTTON, GEORGE P.
Receives G. Edward Pendry award 63

SWANNACK, J. D.
Dynamic shear-modulus apparatus and production test results for a cast crankshaft alloy (A) 830

SWANSON, RALPH FRED
Obituary 958

SWARR, J. N.
How to obtain instrument accuracy with proportioning pumps (A) 159

SWEATT, C. H.
Some industrial experiences with synthetic lubricants (AC) 164

SWITZERLAND
Engineering achievements in Switzerland and their background (correction) 246

SYKES, WILFRED
Receives Missouri Honor Award 421

SYMBOLS
American Standard, Graphical Symbols for Single (One) Line Electrical-Engineering Diagrams 267

SYMONDS, P. S.
Large plastic deformations of beams under transverse impact (A) 594

SYNTHETIC PRODUCTS. *See also* COAL HYDROGENATION
Chemicals from coal (A) 656
Experiences with synthetic lubricants (D) 162
Gas-synthesis plant (A) 226

SYSTEMS ANALYSIS. *See* MANAGEMENT


# T


TABER, GEORGE AYMAR
Obituary 442

TALBOT, C. G.
Turbojet transports—the "Comet" (D) 244

TANKS. *See* PETROLEUM PIPE LINES

TANTALUM
Less familiar metals of commercial importance 3

TAO, L. N.
Joule-Thomson coefficients for air at one atmosphere (A) 504

TATE, B. E.
Properties of coal—their influence on performance of coal-burning apparatus (A) 755

TAU BETA PI
Tau Beta Pi discusses unity of engineering profession 527

TAWES, WILLIAM STANLEY
Obituary 354

TAYLOR, H. BIRCHARD
Receives Elliott Cresson Medal 849

TECHNOLOGY
Technological advancement council formed 853

TELEGRAPHY
Miniature telegraph machine (A) 328

TELEVISION
TV film system (A) 502
Underwater television (A) 145

TELLURIUM
Less familiar metals of commercial importance 3

TEMPERATURE CONTROL. *See also* AUTOMATIC CONTROL
Modern high-pressure high-temperature boilers—I. General design trends and considerations 797

TEMPERATURE MEASUREMENT. *See* INSTRUMENTS—TEMPERATURE

TESAIN, WILLIAM
Influence of unheated starting sections on the heat transfer from a cylinder to gas streams parallel to the axis (A) 920

TESTING. *See* BURSTING TESTS, MATERIALS TESTING, METAL TESTING, NONDESTRUCTIVE TESTING

TESTING MACHINES
600,000-lb testing machine (A) 494
Static-dynamic load machine for high pressure (A) 835

TEXTER, H. G.
Various methods of high-pressure-testing oil-country tubular material (A) 1028

TEXTILE INDUSTRY
Opening and picking by the Whitin system (A) 161

THALLIUM
Less familiar metals of commercial importance 3

THAYER, GORDON B.
Plastics literature references—selected for the Mechanical Engineer—July 1950 through June 1951 309
Plastics molding (BR) 518

THERMAL NUMBER. *See* METAL CUTTING

THERMODYNAMICS
New thermodynamics concept (A) 393
Thermal performance of modern turbines 205, (D) 671
Thermodynamics of gasification of coal with oxygen and steam (A) 39
Thermodynamics or Energodynamics (C) 516
Time required for constant-volume combustion (A) 156

THOM, G. B.
Manpower in defense economy 437

THOMAS, ALBERT HARRY
Obituary 776

THOMAS, ROBERT LEWIS
Obituary 622

THOMPSON, B. J.
Economics of natural gas and liquefied petroleum gases 467

THOMPSON, CLYDE
Obituary 958

THOMPSON, W. F.
Honorary membership in Pi Tau Sigma 421

THOMSEN, E. G.
Deformation work absorbed by the workpiece during metal cutting (A) 919
Plastic flow in a lead extrusion (A) 920

THOMSON, T. KENNARD
Obituary 862

TIME AND MOTION STUDY
How to chart time-study data (BR) 81
SAM-ASME Time-Study and Methods Conference 340, 609
Sixteenth annual time and motion study and management clinic 855
Statistical techniques, time study (D) 336
Work measurement (BR) 672
Work Measurement Clinic held in Syracuse 951

TIME STANDARDS. *See* MANAGEMENT

TIMOSHENKO, STEPHEN P.
Elected Honorary Member of ASME 692

TISCH, FRANK P.
Awarded certificate of service by American Standards Association 948

TITANIUM
Ductile titanium production (A) 752
Less familiar metals of commercial importance 3
Titanium alloys (A) 320
Titanium status (A) 1014

TOBEY, J. E.
Romance of power and fuels 812

TOMPKINS, HAROLD DOREMUS
Obituary 184

TOOLS. *See* MACHINE TOOLS, WOODWORKING MACHINERY

TOONG, T. Y.
Measurement of recovery factors and friction coefficients for supersonic flow of air in a tube (A) 156, 157

TORDA, T. P.
Symmetric turbulent mixing of two parallel streams (A) 922

TORSION
Hysteresis of shaft materials in torsion (A) 38
Torsion of a circular shaft with diametrically opposite flat sides (A) 507
Torsion of curved beams of rectangular cross section (A) 35
Torsion of uniform rods with particular reference to rods of triangular cross sections (A) 508

TOUPIN, R. A.
Variational principle for the mesh-type analysis of a mechanical system (A) 156

TOWNSEND, GEORGE P., JR.
Aircraft gas-turbine bearing lubrication (D) 514

TRAILERS. *See* MOTOR VEHICLES, TRANSPORTATION

TRANSPORTATION. *See also* RAILROADS
Air freight handling operations (D) 837
Passenger conveyer belt (A) 826
Railroads and highway trailers, economic aspects (A) 158
The Transit Van System of transportation 377

TRENT, H. M.
Alternative formulation of the laws of mechanics (A) 156

TRICKEY, P. H.
Magnetic-particle clutch (A) 38

TRIGGER, K. J.
Significance of the thermal number in metal machining (A) 754
Thermophysical aspects of metal cutting (A) 31
Tool forces and tool-chip adhesion in the machining of nodular cast iron (A) 31

TRINKS, W.
Science of flames and furnaces (BR) 673

TRUAX, R. C.
Receives Goddard Memorial Lecture award 63

TRUCKS. *See* INDUSTRIAL TRUCKS, MATERIALS HANDLING

TUBES
Flame propagation in cylindrical tubes 483
Seamless tubing (A) 493
Tube-extrusion process (A) 748
Tube-mill machines (A) 493

TUCKER, J. T., JR.
High-temperature stress-rupture testing of tubular specimens (A) 32

TUNGSTEN
Less familiar metals of commercial importance 3

TURBINES. *See* GAS TURBINES, HYDRAULIC TURBINES, STEAM TURBINES

TURNER, RALPH EMERSON
Obituary 272

TUTTLE, M. A.
Engineering service in coal industry (A) 40

TYLER, C. M., JR.
Airy integral analysis of beam columns with distributed axial loading having a fixed line of action (A) 507

# U


UEHLING, EDWARD A.
Biography ... 613
Elected Fellow of ASME ... 613

ULBERT, AUGUST
Obituary ... 622

ULTRASONICS
Effect of high-frequency sound waves on an air-propane flame (A) ... 236

UNDERWATER RESEARCH
Underwater sound signals (A) ... 502

UNESCO
Discusses engineer's peace task ... 254
Drafts peace recommendations and conclusions ... 347
UNESCO's Montevideo center helps science to help people ... 1046
U. S. National Commission for UNESCO ... 90

UNITED ENGINEERING TRUSTEES, INC.
Report for 1950–1951 ... 89

UPADI
Announces panel for New Orleans Convention ... 693
New Orleans Convention a huge success ... 944

URANIUM
Gaseous-diffusion plant for the production of uranium (A) ... 909


# V


VAKSDAL, ALFRED
Obituary ... 102

VALVES
Contributions to hydraulic control
1—Steady-state axial forces on control-valve pistons (A) ... 38
2—Transient-flow forces and valve instability (A) ... 38
Modern reheat turbines; service experience and recent design progress 107, (D) ... 595
Remote-control electric-valve operation for crude and products lines (A) ... 1030
Some practical considerations regarding pipe-line control-valve design (A) ... 1026

VANADIUM
Less familiar metals of commercial importance ... 3

VANDEGRIFT, CLARENCE GILBERT
Obituary ... 354

VAN DUZER, R. M., JR.
Operating experiences with cyclone-fired steam generators (D) ... 930

VANES. *See* VIBRATION

VAN PATTER, H. S.
Developments in Francis turbines (D) ... 511

VAN SANT, R. W., JR.
Diesel fuel performance (A) ... 332

VARNUM, EDWARD C.
Nomograms as tools to facilitate the solution of engineering formulas (A) ... 667

VEENSCHOTEN, VINCENT V.
Biography ... 97
Elected Fellow of ASME ... 97

VENTURI TUBES. *See* FLUID METERS

VERSCHOOR, J. D.
Heat transfer by gas conduction and radiation in fibrous insulations (A) ... 159

VIAL, P. F.
Simple high-speed air spinner for centrifugal testing of small mechanical devices (A) ... 921

VIBRATION
Bending vibrations of a pipe line containing flowing fluid (A) ... 593
Concept of complex damping (A) ... 593
Critical whirling speeds of shaft-disk systems (A) ... 921
Forced lateral vibration of beam carrying a concentrated mass (A) ... 594
Forced oscillation of the centrifugal pendulum with wide angles (A) ... 923
Free oscillation of the centrifugal pendulum with wide angles (A) ... 593
Free vibrations of constrained beams (A) ... 594
Mathematical analysis of the relaxation type of vehicle suspension (A) ... 594
Measurement of hydraulic-turbine vibration (A) ... 158
Nonlinear problem in the bending vibration of a rotating beam (A) ... 834
Numerical analysis of forced vibrations of beams (A) ... 923
Pulsations in gas-compressor systems (A) ... 33
Study of burner oscillations of the organ-pipe type (A) ... 593

VIBRATION (*continued*)
Study of vanes singing in water (A) ... 593
Torsional vibration notes with solutions for an untuned viscous damper and a flexible coupling with nonlinear elasticity (A) ... 832
Use of the centrifugal governor mechanism as a torsional vibration absorber (A) ... 667
Vibrations in knee-type horizontal milling machines (A) ... 919
Vibrations of elastic shells in a fluid medium and the associated radiation of sound (A) ... 509

VINCENT, EDWARD T.
Biography ... 613
Elected Fellow of ASME ... 613

VISCOSIMETERS. *See* INSTRUMENTS—VISCOSITY

VISCOSITY
Effect of variations in viscosity of lubricants upon Timken OK and psi values (A) ... 40

VISUAL AIDS. *See* EDUCATION

VOADEN, GRANT H.
Runaway speed of Kaplan turbines (A) ... 334

VOGEL, W. J.
Progress report of reheat boiler operation and design (A) ... 153

VOORIN, C. M.
Modern steel bolting for piping and pressure vessels (A) ... 1024

VOLTERRA, ENRICO
Bending of a circular beam resting on an elastic foundation (A) ... 33
Mathematical analysis of the relaxation type of vehicle suspension (A) ... 594

VON DER NUELL, W. T.
Auxiliary gas-turbine engine (D) ... 515

VON KARMAN, THEODORE
Awarded British Royal Aeronautical Society gold medal ... 530


# W


WADE, I. L.
Operating experiences with cyclone-fired steam generators ... 359, 931

WADLEIGH, K. R.
New method of calculation of reheat factors for turbines and compressors (A) ... 156

WAGES AND WAGE INCENTIVES
Changing philosophies on wage incentives ... 277
Incentive management (BR) ... 167
Incentives for better production effect veness (A) ... 41, 573

WAGNER, CHARLES F.
Receives Edison Medal ... 177

WAGNER, HERBERT L.
Light-load design features for spreader stokers ... 458

WALLACE, W. P.
Report of an investigation of the strain hardening effect upon subsequent levels due to metal cutting (A) ... 592

WALSH, JAMES LAWRENCE
Obituary ... 776

WALSH, JOSEPH PATRICK
Obituary ... 184

WARNER, DONALD FRANKLIN
Obituary ... 442

WARREN, GLENN B.
Biography ... 71
Bringing the engineering viewpoint to bear on public affairs; a realistic approach ... 967
Honored by University of Wisconsin ... 607
Receives ASME Medal ... 71

WARREN, T. E.
Comparative performance of coals of different rank in a film-cooled gas-turbine generator (A) ... 503

WASTE AND WASTE UTILIZATION. *See* INDUSTRIAL WASTES, WOOD WASTE

WATER ANALYSIS
Adaptation of the spectrophotometric determination of small amounts of soluble silica in water to the determination of undissolved forms of silica (A) ... 332
Spectrophotometric determination of small amounts of soluble silica in water (A) ... 331

WATER SUPPLY
Vibratory explosives for the improvement of water-well yield (A) ... 657

WATER SUPPLY (*continued*)
Water-purification unit (A) ... 913
Water shortages (A) ... 1022

WATTS, G. W.
Stresses in a pressure vessel with a flat-head closure (A) ... 238
Stresses in a pressure vessel with a hemispherical head (A) ... 757

WEAR
Shotpeening of gears (D) ... 79

WEATHER. *See* METEOROLOGY

WEIBULL, WALODDI
Statistical distribution function of wide applicability (A) ... 156

WEISS, M. D.
Water-pollution by industry (AC) ... 165

WELCH, W. P.
Hysteresis of shaft materials in torsion (A) ... 38

WELDING AND CUTTING
American Welding Society announces plans for spring technical meeting, 1953 ... 951
Annual Engineering Undergraduate Award and Scholarship Design Program of James F. Lincoln Arc Welding Foundation ... 1044
Arcair process (A) ... 150
Cold pressure welding (A) ... 1016
Gouging electrode (A) ... 317
Recent developments in Francis turbines ... 189, (D) 510
Resistance-welding contest announced ... 174

WELDON, R. L.
Awarded Julian C. Smith Medal ... 343

WELLS. *See* PETROLEUM-WELL EQUIPMENT, WATER SUPPLY

WEN EL, ALFRED C.
Boiler controls for multiple fuel firing in modern steam-generator installations (A) ... 925

WERREN, F.
Mechanical properties of glass-cloth plastic laminates as related to direction of stress and construction of laminate (A) ... 920

WESTON, E. H.
Method of establishing and comparing tonnage ratings of Diesel locomotives (A) ... 590

WHALEN, W. D.
Modern machine-tool lubrication practice ... 803

WHELLER, JAMES W.
Air freight handling operations (D) ... 839
Awarded Musick Memorial Trophy ... 1044

WHEELON, O. A.
Awarded Wright Brothers Medal ... 530

WHITE, A. E.
Rupture and creep characteristics of titanium-stabilized stainless steel at 1100 to 1300 F (A) ... 32

WICKENDEN, T. H.
Elected member of the Welding Research Council ... 849

WILCOCK, DONALD F.
Aircraft gas-turbine bearing lubrication (D) ... 513
Oil flow, key factor in sleeve bearing performance (A) ... 41

WILKINSON, G. D.
Application of statistical techniques in time study (AC) ... 336

WILLARD, LEIGH
Obituary ... 538

WILLCOX, FREDERICK P.
Receives Photogrammetric Award ... 261

WILLETT, JAMES VAN RENSSELAER
Obituary ... 354

WILLIAMS, CHESTER ARTHUR, JR.
Obituary ... 184

WILLIAMS, FRANK S. G.
Modern steel bolting for piping and pressure vessels (A) ... 1024

WILLIAMS, RICHARD B.
Performance of finned tubes in shell-and-tube heat exchangers (A) ... 668

WILLIAMSON, GERALD V.
Biography ... 613
Elected Fellow of ASME ... 613
New features of steam plants on inland rivers ... 723

WILLIAMSON, J. D.
Training an operating group for a second generating station (A) ... 665

WILLIAMSON, T. D., JR.
Pipe-line scraper development (A) ... 1025

WILLIS, CECIL CUSTER
Obituary ... 776

WILLISTON, ARTHUR L.
Receives James H. McGraw Award .... 692

WILSON, C. D.
Modern reheat turbines (D) .... 596
The reheat steam turbine (D) .... 597

WILSON, RALPH L.
Elected president of American Society for Metals .... 1044

WILTRAKIS, JOSEPH E.
Materials-handling factors affecting space utilization (A) .... 928

WINNE, HARRY A.
Biography .... 71
Honorary Member of ASME .... 71

WOLF, H. COMER
Obituary .... 354

WOMEN IN INDUSTRY
Results of questionnaire on engineering careers for girls .... 607

WOOD, H. J.
Auxiliary gas-turbine engine (D) .... 515

WOOD, I. D.
Awarded John Deere Gold Medal .... 610

WOOD. *See also* HARDBOARDS, PLYWOOD
Tropical hardwood (A) .... 322

WOOD INDUSTRIES. *See* FURNITURE, HARDBOARDS

WOOD PRESERVATION
Century of engineering in wood preservation (A) .... 926

WOOD WASTE
Furniture core panels of wood waste (A) .... 925
Profitable by-products from wood manufacturing waste (A) .... 154
Synthetic lumber (A) .... 821
Waste-wood-fired gas-turbine power unit (A) .... 409

WOODS, CHARLES F.
Some practical considerations regarding pipe-line control-valve design (A) .... 1026

WOODS, H. B.
Recent developments in drill bits and drilling methods (A) .... 1028

WOODWORKING MACHINERY. *See also* SAWS
Development of materials for wood-cutting tools (A) .... 926
Hydraulic barking (A) .... 407
Some technical aspects of trimming lumber in the planing mill (A) .... 407
Woodworking machinery; history of development from 1852–1952 .... 983
Woodworking machinery manufacturers look at carbide-tool cutting (A) .... 155

WOOLSON, HARRY THURBER
Obituary .... 622

WORLEY, ROBERT W.
Steel-works power plants (A) .... 924

WORTH, JOHN S.
Modern steel bolting for piping and pressure vessels (A) .... 1024

WOSIKA, L. R.
Radial-flow compressors and turbines for the simple small gas turbine (A) .... 408

WU, M. H. LEE
Simple method of determining plastic stresses and strains in rotating disks with nonuniform metal properties (A) .... 833

WYATT, H. W.
Comparisons at elevated temperatures of some commercial grades of ferritic cast steels (A) .... 670


# Y


YANG, C. T.
Plastic flow in a lead extrusion (A) .... 920

YANG, KUO-LIANG
On symmetrical strain in solids of revolution in spherical co-ordinates (A) .... 35

YARGER, GLEN V.
Diesel power plants versus steam power plants (A) .... 831

YEAGER, U. B.
Engineering service in the coal industry (A) .... 40

YING, A.
On the solution of the Reynolds equation for slider-bearing lubrication—III. Effect of transverse curvature (A) .... 921

YOPP, PAUL R.
Biography .... 689
Nominated for Regional Vice-President .... 689

YORK, J. LOUIS
Photographic analysis of sprays (A) .... 39

YUSUFF, SYED
Large deflection theory for orthotropic rectangular plates subjected to edge compression (A) .... 833


# Z


ZEILER, C. A.
Effect of variations in viscosity of lubricants upon Timken OK and psi values (A) .... 40

ZENO, D. R.
Auxiliary gas-turbine engine (D) .... 515

ZIMMERMAN, RICHARD H.
Progress report on the study of supercompressibility factors for natural gases (A) .... 158

ZIRCONIUM
Less familiar metals of commercial importance .... 3

ZISMAN, W. A.
Experiences with synthetic lubricants (D) .... 162

ZIZICAS, G. A.
Dynamic buckling of thin elastic plates (A) .... 405

ZYLSTRA, L. B.
Thermophysical aspects of metal cutting (A) .... 31
Tool forces and tool-chip adhesion in the machining of nodular cast iron (A) .... 31